



JPRS Report

Environmental Issues

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Environmental Issues

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U.S.-Japan Ozone Layer Protection Experiment Planned

OW2509071891 Tokyo KYODO in English 0628 GMT 25 Sep 91

[Text] Tokyo, September 25 (KYODO)—The Ministry of Posts and Telecommunications and the University of Alaska in the United States have agreed to conduct joint experiments on using radio waves to protect the ozone layer, ministry officials said Wednesday.

Radio waves will be used in an attempt to prevent chlorofluorocarbons (CFCs) from depleting the ozone layer, the officials said.

The experiments are likely to start later this year under the Japan-U.S. scientific and technological cooperation agreement.

Studies have shown that depletion of the ozone layer could produce more skin cancers and affect agricultural production by allowing excessive amounts of ultraviolet waves to reach the earth's surface.

In the stratosphere, the chlorine atoms of CFCs destroy the thin band of ozone that absorbs ultraviolet rays. CFCs are commonly used as refrigerants, solvents, and cleaning agents, and eventually end up in the stratosphere.

Laboratory tests have shown that if CFCs are irradiated with strong bursts of short radio waves, their chlorine atoms become chlorine ions, which do not affect the ozone layer.

Under present plans, a high-powered shortwave generating facility will be built in Alaska to transmit radio waves some 40 to 100 km above the earth to study their effects on the ozone layer.

Indonesian Foreign Minister Urges Renewed North-South Dialogue

BK2809091991 Jakarta ANTARA in English 0714 GMT 28 Sep 91

[Text] New York, Sept 28 (ANTARA)—Indonesia Friday reminded the world on the importance of the reactivation of the North-South dialogue on balancing economic growth towards a lasting world peace.

Addressing the United Nations General Assembly [UNGA] here, Foreign Minister Ali Alatas said the reactivation of the dialogue was very urgent as elements of the uncertain world economic development tended to emerge.

He cited as examples the increasing protectionism, increasing economic imbalance, obstacles hampering relations between industrialized and developing nations, dramatic economic changes in Central and Eastern Europe, and the setting up new economic groups among developed countries.

All of these facts demanded new international consensus and commitment to strengthen the existing cooperations in order to boost economic growth and development in the developing countries.

"The economic progress in the North (developed nations) will be impossible without economic growth in the South (developing countries) as the two sides are closely related and interdependent," he stressed.

Minister Alatas also said that the "new world order" must be managed so as to serve the interests of all nations "large and small, strong and weak."

"If we are to build a viable new world order, then its architecture and management must be comprehensively conceived and not be made dependent on the military and economic might of individual countries or groups of countries," he said. He was echoing the views of several Third World delegations alarmed at what they see as the growing muscle-flexing of the United States, now seen as the only real superpower in the world following the decline of Soviet power.

Speaking on the current environmental damage, Minister Alatas said that it was the common responsibility of all nations to deal with and it should not become a source of conflict between the North and the South. Minister Alatas also said that the development pattern in the developed nations had become the main source of environmental damage in various parts of the world.

Concerning Indonesia's role, Alatas said that his country was fully aware on its special responsibility to be "the guard" of its extensive tropical forests.

Alatas also addressed the contentious theme of human rights and the UN role's in promoting them.

He made a distinction between civil and political rights on the one hand and economic, social and cultural rights on the other. "Exclusive emphasis on one category over another cannot be justified," he said.

While agreeing with the UN view that the principle of noninterference should not be used as a pretext to violate human rights, he said: "Maximum caution needs to be exercised lest the defense of human rights becomes a platform for encroaching on the essential jurisdiction of states and eroding their sovereignty." He also said the way was now clear for sealing a Cambodian settlement in Paris late next month.

"At last we now can see the light at the end of the tunnel and this time, it is not the light of an on-rushing train," he said. "The way is open for adoption and signature" in late October at the Paris conference which Indonesia and France cochair, he said. Alatas, an unofficial candidate to succeed UN Secretary General Javier Perez de

Cuellar, praised the UN chief's "wisdom, dedication, and consummate skill."

The reforms he has instituted and the many proposals he has made on the restructuring of the role and functioning

of the United Nations system provide us with a visionary and at the same time practicable blueprint for dynamic adaptation of this world body to the requisites of a rapidly changing world," he added. Perez de Cuellar will step down as UN chief at the end of the year.

GHANA

Measures Adopted To Check Deforestation

AB1409220091 Accra Ghana Broadcasting Corporation
Radio Network in English 0600 GMT 14 Sep 91

[Text] The government has announced a number of measures to regulate the timber industry with a view to checking deforestation. These include phasing out completely the export of round logs by 1993.

The chief technical director of the Ministry of Lands and Natural Resources, Dr. Rex Tsatsu, made this known during African Timber Organization and Forestry Day at the GIFEX EX-OD 91 [expansion unknown] in Accra. He said the export of rough sawn timber will also be phased out by 1994.

Dr. Tsatsu said the wood processing and marketing industry has decided to donate at least 500 million cedis a year to support the afforestation and reforestation program. This represents one percent of the industry's annual export earnings.

Dr. Tsatsu said Ghana's forests have dwindled from 88,000 square kilometers at the end of the last century to 17,000 today. He said the government has borrowed some \$65 million from the International Development Association for the forest resources management project. The project is also being supported with grants from the Danish International Development Agency and the Overseas Development Agency.

A representative of the African Timber Organization, Mr. Gerald Deon, called for coordination in the activities of the wood industry and a continuous exchange of policies between member countries of the organization.

MOZAMBIQUE

Report Documents Civil War's Toll on Wildlife

91WN0711A Johannesburg THE STAR in English
15 Aug 91 p 17

[Article by Ken Vernon of Star Africa Service: "Brutal Civil War Has Decimated Folk and Fauna"]

[Text] A confidential report has revealed that tens of thousands of animals are being slaughtered in Mozambique by military weapons at the same time that the government is taking steps to preserve the flora and fauna.

Maputo—The parable most used by Mozambicans to describe the suffering caused by their brutal civil war is that when two buffalo fight, it is the grass that gets trampled.

That parable may have to change, however, if the country's 14-year-long civil war continues because there won't be any buffalo—or many other large animals—left to trample anything.

The appalling human cost of the Mozambican civil war has been well documented, but now evidence has come to light that the fauna, too, has been decimated.

Tens of thousands of elephant, buffalo, hippo and large buck have been slaughtered by military weapons, many mowed down from the air by hi-tech helicopter gunships, either for "sport" or to feed meat-hungry soldiers and civilians.

The scope of the slaughter has been revealed in a confidential report drawn up for Lomaco—the Mozambican arm of the Lonrho conglomerate—on the potential of the 2,000 sq km Marromeu wetland on the southern banks of the Zambezi river—probably the last refuge of the large herds of game that once roamed the country.

Reduced

The report makes sober reading. In the past 12 years the buffalo population of the remote wetland has been reduced by 91 percent—from more than 55,000 to less than 4,000.

Elephant numbers have dropped from more than 1,500 in a 1988 census to an estimated 326 just two years later. Similarly, the hippo population has been reduced by 83 percent while the numbers of the larger buck, such as reedbuck and waterbuck, have both been cut by more than 90 percent.

The report says the slaughter is continuing and is likely to continue for as long as the civil war does.

Ironically, it seems money to save the animals will have to come out of the barrels of even more guns. The report concludes that only private funding can ensure the survival of what game is left once the civil war ends, and that the only private funding that will be available in the short term is likely to come from hunters wanting to stalk surviving game.

It recommends that much of the area be leased to Lomaco which, in conjunction with the local population, would be responsible for curbing illegal hunting while at the same time utilising limited hunting as a form of income.

But not all is gloom, however.

The Marromeu report, along with others on the conservation of the islands of the Bazaruto Archipelago, on the twinning of a proposed game reserve to adjoin the Kruger National Park and of linking the Maputo Elephant Reserve in southern Mozambique to reserves in northern Natal, indicates that Mozambique is already planning to conserve what remains of its natural resources.

As with Marromeu, much of the funding to establish and run these proposed reserves will have to come from hunting licences and concessions, and already South African and foreign companies are scrambling for these potentially valuable concessions.

A common factor in all the conservation planning is Paul Dutton, a conservationist who has been closely connected with Mozambique for nearly 30 years and who sees a resurgence of interest in conservation by the Mozambican government.

In the years immediately after independence in 1975, he worked closely with another Southern African conservation legend, Ken Tinley, to produce a conservation blueprint for the whole of Mozambique.

"That was a fantastic time, we had full government support, money from the Nordic countries and a virtually clean conservation slate. What destroyed us was the war. It derailed all our plans and until now it had just not been possible to restart."

Mr. Dutton is coauthor of the Marromeu report and said that while the war-induced slaughter of large game at Marromeu can more than likely be extrapolated to the rest of the country, it may have been a blessing in disguise for hundreds of smaller species.

"Unfortunately for the bigger game species, they are desirable for meat and are relatively easily tracked and spotted. In a country where military weapons are readily available, that adds up to trouble.

"But, at the same time, the war has resulted in the depopulation of vast areas and in these areas many smaller species that might normally be snared or hunted by local villagers have been given a 14-year reprieve, so it's not all bad news."

Mr. Dutton is particularly excited with the conservation master plan for the islands of Margaruque, Benguera, Bazaruto and Santa Carolina that comprise the Bazaruto Archipelago, and with the fact that the government has tacitly accepted his main proposal that the whole archipelago be declared a national park.

Restricts

In addition, his plan restricts tourist orientated development and crocodile farming with the aims of protecting threatened habitats and endangered species. The plan also recommends that only "traditional" fishing be allowed, banning rapacious foreign net trawlers from the area.

It is the once pristine Mozambican coastline that has suffered more than any other part of the country as a result of the civil war. Most of those who have been dispossessed of their land have fled to the coastal areas, which are easier to defend and are more accessible for delivery of emergency food and clothing supplies.

"It has been a politically brave move for the government to accept the Bazaruto report because it means those refugees in the area will eventually have to be removed and agriculture halted," Mr. Dutton said.

"Also, I see the archipelago plan as a good springboard for similar action on the mainland coastline once the war there ends," he said.

NAMIBIA

Culling of 23,000 Seals Begins

MB1709073991 Johannesburg South African Broadcasting Corporation Network in English 0500 GMT 17 Sep 91

[Text] The culling of 23,000 seals has begun in Namibia despite negotiations being held between representatives of the International Fund for Animal Welfare and the Namibian Government to stop the practice.

The fund's director of animal welfare, Mr. John Thorpe, said his organization had offered to promote tourism to Namibia if the government banned the culling of seals, and that Namibia would earn far more from exploiting live seals than by killing them. The fund's southern African representative, Mr. David Barrett, said that while South Africa was honoring a two-year moratorium on seal culling, Namibia was going ahead without waiting for the results of investigations into the scientific issues involved.

In the meantime a leading international marine mammal expert, Dr. David Lavinia of Canada, has said that there is no scientific evidence that the culling of seals will result in increased commercial fish catches. Dr. Lavinia, who is attending a top level conference in Cape Town on the future of the Cape Fur seals, said numerous overseas studies had failed to prove a direct link between growth in sea populations and a decline in commercial fishing stocks.

Another delegate to the conference, Professor Doug Butterworth of the University of Cape Town, said the Cape Fur seal population of just over 2 million would double by the turn of the century. Prof. Butterworth said that seals consumed 2 million tons of fish annually, about two-thirds of which was estimated to be commercially important.

NIGERIA

Study Finds Aquatic Animals Develop Resistance to Heavy Metal Pollution

91WN0724A Lagos THE GUARDIAN in English 28 Jul 91 p A3

[Article by Felix Nyong, staff correspondent: "Scientists Report Heavy Metal Pollution in More Rivers"]

[Text] The concentration of unusually high degree of heavy metals in four of the nation's rivers is reportedly posing a serious threat to both aquatic and human lives in these areas.

Four scientists from the National Institute of Medical Research (NIMR) led by Dr. D. K. Olukoya, reported recently that most of the aquatic animals in Lagos lagoons had developed heavy metal resistance. In effect they have developed immunity to toxic metals such as lead, zinc, cobalt, copper and chromium. The sites for the investigation covered major coastal areas of Lagos—Lekki, Oworonshoki, Maroko, University of Lagos lagoon, Ikoyi Park, Marina and Qua Iboe river in Akwa Ibom State.

The team which included Dr. D. K. Olukoya, A. O. Ani and A. A. Adegbola of NIMR was said to have undertaken the investigation because there was virtually no study on the epidemiology and biochemistry of resistance to heavy metals in any of the nation's rivers.

Commenting on the implications of the work, Dr. D. K. Olukoya said unlike other countries where the problem of environmental pollution had reached an alarming level, Nigeria was not doing much to monitor the degree of heavy metals in the rivers, as well as their effects on the aquatic animals.

Olukoya further stressed that the fact that aquatic animals had developed strong resistance to most of the highly toxic effluents portends a serious health hazard to those who eat them.

He further explained that the research outcome opens up a new area in the study of resistance to drugs by some bacteria. The report, however, has not yet been submitted to the Federal Environmental Protection Agency, (FEPA) because Olukoya said his team did not see the need to collaborate with FEPA officials since the methodology his team adopted was quite different from what has been used before.

A similar research was also undertaken by a three-man team led by Mr. E. D. Udosen of the Department of Chemistry and Biochemistry, University of Cross River State, Uyo.

In its report, the team which investigated concentrations of heavy metals in fishes from Qua Iboe, Atan and Nkap streams in Ikot Ekpene, Akwa Ibom State, said that after studying a total of 36 specimens of four fish species it discovered high concentrations of mercury and chromium in the four fish species in the three streams.

Higher zinc and lead levels in Qua Iboe River, it said, possible derived from both domestic sewage and drainage from automobile workshop as well as alleged negligence on the part of the staff attached to the neutralisation unit of a battery manufacturing company operating in the area.

SOUTH AFRICA

National Environment Conference Seen as Step Toward Single South African Green Organization

91WN0692A Johannesburg THE WEEKLY MAIL
in English 1 Aug 91 p 23

[Article by Glen Retief: Cape Town]

[Text] Talk of environmental issues as "white middle-class sentimentality" may be a thing of the past, judging by the mood at a national conference on the environment held last weekend at the University of the Western Cape.

Organised by the World Conference on Religion and Peace (WCRP) and the Cape Town Ecology Group, it drew together grassroots political groups from as far afield as Kuruman, Witbank and Soweto under a simple but powerful slogan: "Ecologise politics, politicise ecology." Links between the struggle against apartheid and the battle for a clean and healthy natural environment were drawn.

Although no firm programme of action emerged, networking between political groups was established, with the aim of moving towards a single South African green organisation which would command "mass-based support."

The event was a first for democratic and community organisations in South Africa which have, by and large, treated conservation as a secondary and unimportant concern, to be postponed until after the achievement of political democracy.

Hundreds of stories were told of ordinary people struggling, in often defiled and polluted environments, to improve their way of life and win such basic ecological rights as clean water, clean air and clean streets.

A number of speakers emphasised that apartheid had denied these rights to blacks by overcrowding them into bantustans and townships which were, as one delegate said, "health hazards designed to make our lives short."

Antiapartheid activist Moulana Faried Esack said the challenge for liberation movements was to "break out of the trap of defining ourselves in reaction to an apartheid state" and "redefine ourselves in terms of a commitment to respecting life."

A recurrent theme was that a healthy relationship between human beings and their natural environment could not exist in the context of "capitalist value systems."

In the same vein, mainstream environmentalism in South Africa was criticised for its "duplicity."

"We see Naas Steenkamp of Gencor opposing the mining of dunes in St. Lucia, when his own company has shares in precisely the group that wants to do the mining," said Esack.

Trade Union Movement Begins To Tackle Environmental Issues

91WN0692B Johannesburg *THE WEEKLY MAIL*
in English 1 Aug 91 pp 24-25

[Article by Drew Forrest: "The Greening of the Reds"]

[Text] There are signs that South Africa's trade union movement is starting to realise the link between worker and environmental struggles.

A "RAINBOW coalition"—of red and green activists—is emerging, as South Africa's trade union movement begins to tackle environmental issues in earnest.

Recent months have seen a growing number of disputes where worker and environmental struggles have been linked, and unions have joined forces with "green" lobby groups to put pressure on offending employers.

The case for the integration of red and green politics is forcibly put by two key Congress of South African Trade Unions officials, Rod Crompton of the Chemical Workers Industrial Union (CWIU) and Alec Erwin of the National Union of Metalworkers (Numsa), in a soon-to-be-published book.

In "Green at the Grassroots—Politics and the Environment in South Africa," they argue that union struggles for health and safety in the workplace "constitute the first line of defence for an embattled environment."

They also stress that unions and other organs of civil society have a vital role in safeguarding workers and the community as a whole against the "onslaught of unchecked economic development."

As an example of the connection between worker interests and the health of the broader environment, they cite Thor Chemicals, whose Cato Ridge plant hit local and international headlines last year after concentrations of highly toxic mercury were detected in the nearby Umgweni River.

An analysis of river sediment samples showed mercury present at 8,810 times the limit classed as "hazardous" in the United States. The metal can destroy the central nervous system, and there were reports of two workers at Thor, a British multinational which imports mercury waste to South Africa, having "gone mad."

In a precedent-setting sequel, protest demonstrations outside the plant drew in the CWIU, environmental pressure group Earthlife and peasants. A parallel protest took place in the United States outside American Cyanamid, one of Thor's suppliers.

Because of the highly environment-sensitive sector it organises, the CWIU has been the labour movement's frontrunner on environmental questions. Its recent congress decided the union had to be involved in the planning and control of health, safety and environment issues all the workplace, in the community and at national level.

It is currently involved in a campaign against German multinational Bayer AG, after the discovery that five workers at a now-closed Durban subsidiary, Chrome Chemicals, had died of mysterious chest ailments.

Natal University researchers found that one in every four Chrome Chemicals workers had chrome-induced lesions in their noses. Again, there was evidence of wider environmental impact—Chrome +6, a dangerous substance processed by the company, was traced in groundwater near its waste-disposal site.

But the congruence of red and green interests extends beyond workplace health and safety and chemical pollution—there is often a vital connection between the husbandry of natural resources and employment.

This was most clearly highlighted in the recent campaign by another Cosatu affiliate, the Food and Allied Workers Union [FAWU], against Taiwanese fishing trawler-owners operating off the South African coast.

At one level, the campaign centred on working conditions aboard the ships: South Africa seamen had lost fingers through frostbite while working in freezer compartments.

But it was broadened to include Taiwanese gill-netting, which has a devastating effect on marine resources and biodiversity, and which Fawu believes is linked to a crisis in the industry leading to mass retrenchments and factory shut-downs.

Green groups were drawn into the union's drive on the issue, and Fawu's Nosey Peterson sees the involvement of mass-based organisations as the spur for subsequent antigill net legislation.

COSATU [Congress of South African Trade Unions] is not the only worker organisation to have taken a stand on the environment: the smaller National Council of Trade Unions and some of its affiliates have on occasion displayed a similar consciousness.

Indeed, NACTU's [National Council of Trade Unions] mine union played a vital role in exposing conditions in the asbestos industry in the mid-1980s.

Describing environmental protection as one of the "pillars of national health," NACTU has called for community-based health and environment committees at local, regional and national level.

Its largest union, the South African Chemical Workers Union, contacted Chemwatch, a group of Natal farmers and ecologists fighting for a ban on hormone herbicides.

It has also said its members plan to put pressure on chemical firms to phase out ozone-destroying chlorofluorocarbons—although it is not clear whether rhetoric has been matched by action.

While eco-consciousness is dawning in union circles, one should not exaggerate the extent of activity on the ground. Many unions have yet to address the issue in their sectors. As with AIDS and women's issues, the environment is a fashionable cause which often draws more lip-service than hard organisational grind.

There is also the perception among many black people, unionists included, that middle-class white conservation activists are more interested in South Africa's plant and animal life than they are in its people.

In reality, the relationship between environmental and worker interests can be a complex one.

Erwin and Crompton argue that in the long term, environmental damage will hamper job creation and that "there is likely to be greater job security in the rapidly developing pollution control and cleanup industries, as a new, environmentally sustainable growth path is followed." But in the immediate term, conservation and antipollution measures can mean more unemployment.

The dilemma was thrown into harsh relief by the row over British-owned Richards Bay Minerals' scheme to strip-mine dunes in the St. Lucia area for titanium, which mobilised 250,000 people to support a petition against the move and galvanised an environmental renaissance in South Africa.

While conservation activists saw the plan as a case of "big bucks against reedbucks"—their fear was that the St. Lucia wetlands, recognised as a world heritage site, could be jeopardised—the issue was more complex of the peasants who live round the lake and the unionists who operate RBM's dredgers.

The expansion of the company's operations promised the creation of 600 jobs, increased opportunities for training and promotion and more housing and a school for the workers.

In addition, black villagers living on the border of the St. Lucia reserve are denied access to the fish, game and reeds, once a vital part of their subsistence economy. Parks Board rangers prosecute poachers with such vigour that for the locals, "conservation means handcuffs."

"None of the environmental organisations consulted us about the issue," a National Union of Metalworkers official complained at the time. "Some of our members wonder if they think it is more important to save insects and animals while people have to sacrifice wages and jobs."

Pioneer Effort in Total Waste Recycling Initiated
91WN0632C Johannesburg THE WEEKLY MAIL
in English 4 Jul 91 p 3

[Article by Reg Rumney: "Recycling Pioneers Cut Down on Waste"]

[Text] The disposal of waste does not yet pose the problems in South Africa that it does in Europe. Yet as we become more environmentally conscious, and run out of space, recycling must be an option. Is it feasible? Reg Rumney reports.

A pioneer recycling business in Randburg is being closely watched by the waste management industry.

Resource Recycling (Randburg) Pty, a newly formed subsidiary of Bateman Project Holdings, promises to be South Africa's first total waste recycling plant.

Privately financed, and at a capital cost of more than R7-million, it will manage and operate the Randburg municipality's landfill site, with the stated aim of reducing the waste stream by at least 50 percent through recycling.

A surprising amount of material is already recycled in South Africa. What makes Resource Recycling unusual is that material for recycling will be taken out of the delivered garbage at the dumping site and that the operation is privately financed.

Managing Director John des Ligneris says that whereas the municipality was dumping at the landfill before, there is now for the same cost a long-term saving, in that the landfill site will last five to 10 times longer than it otherwise would.

"The question is whether to pay a couple of rand a ton now and have this benefit or have the additional cost in four or five years' time." Then a new site would have to be developed, at a cost of around R15-million.

A wide range of materials will be recovered, says Des Ligneris, noting the market will decide exactly what. Paper and plastic will be hand picked into the various categories, while glass will be sorted into three color categories, green, brown and clear; vegetable materials will be milled for composting; tin cans taken out magnetically; and building materials will be crushed into sand, with crushed concrete liberating reinforcing steel in the process.

Some separation of waste will be needed for the project to succeed, says Des Ligneris, so public participation must be encouraged. For instance, paper contaminated by other waste cannot be recycled and must be compacted for the landfill.

Moreover, if the smelly biodegradable material is taken out it makes the manual sorting more pleasant, and the project will be labour intensive.

Des Ligneris says he could have gone the machine-intensive route, as is done overseas, but he adopted overseas techniques to African conditions.

He says he's taken note of trends in recycling overseas, and rejects scepticism about the project.

He admits that if this project is successful there is nothing to stop others entering the market, with a resultant decrease in prices for recycled materials as supply increases.

Waste-Tech technical director Dave Baldwin is a doubter. "Municipal waste recycling is most successful when done at source." In South Africa now this means, for example, taking your bottles to bins provided by PG Glass for re-use in making new glass.

Baldwin reckons collection of material for recycling can be encouraged in various ways, for example by paying deposits on tin cans. In New York the five cent deposit on each can makes collection for recycling easy.

Research done by the Council for Scientific and Industrial Research shows how much recycling there already is in South Africa.

There is a lot of recycling of industrial waste, because it is economical. Municipal waste isn't recycled because it isn't economical to do so, Baldwin maintains.

Hence his company will be watching Resource Recycling with interest. If it is a success Waste-Tech will be next in line.

In South Africa there is a further complication: there is apartheid waste. Waste from white areas tends to contain lots of highly compactible paper, cardboard and plastic. This kind of waste can be compressed to a third of its original volume. Waste from black areas contains lots of ash, because the paper, cardboard and plastic is often burned for fuel. It can be compressed only half as much as white waste. The division is changing, notes Baldwin, but for the moment this constrains the recycling of waste at the dump site.

Overseas, Baldwin maintains, recovery for recycling is made possible by the high cost of handling waste in the first place. In Holland, for example, one pays 80 guilders to take away garbage. Here R5 is considered a high price.

Further complications arise because of the public's view of products derived from waste. For example, compost from a dump site is considered as being inferior to that derived from natural vegetation, so it sells for a lower price.

Johannesburg Tackles Growing Waste Disposal Problems

91WN0632D Johannesburg THE WEEKLY MAIL
in English 4 Jul 91 p 3

[Article by Philippa Garson: "How To Trash a Million Tons of Garbage"]

[Text] Every year Johannesburg produces a million tons of garbage—and there are conflicting views on how to dispose of it.

Near the centre of town is a vast space flanked by grassy banks and dusky mine dumps where birds wheel in the air crying seaside melodies.

On a hill a large metallic animal, futuristic and deadly in appearance, seems to chomp the earth.

Huge metal wheels studded with teeth churn fiercely; its front and rear ends thrash about like two heads.

The air is sour-smelling, the ground strangely springy. A few metal stools stand in a forlorn row. On closer inspection the "stools" have metal spikes on their "seats".

This is no post-apocalyptic movie scene, but the Robinson Deep landfill site, a mere five minutes from the centre of Johannesburg, where some of the 1-million tons of garbage generated yearly by the city are disposed of.

The two-headed monster is really a massive garbage compressor called a Trashmaster, which has double the compressing capacity of a bulldozer and can reduce 1,000 kg of garbage to one cubic metre.

The strange "stools" are fly-traps—spiked so no-one carries them off to use as garden furniture—the springy ground is layer upon layer of "sculptured" garbage.

And if we continue generating more and more rubbish, warns one environmentalist, a likely future scenario is one in which we live amidst towering, smelly mountains of rubbish, which have all but smothered our green hills and valleys.

Rapid urbanisation and the mushrooming of informal settlements in and around Johannesburg means more people, inadequate infrastructure and much more rubbish. At present, most waste experts praise Johannesburg's efficient and clean solid waste disposal system.

But unless our economy adjusts to accommodate recycling of waste, and companies cut down drastically on the layers of packaging products are swathed in, we're in for trouble says Earth Life's Johannesburg coordinator, Henk Coetzee. Unlike the Johannesburg city council's solid waste engineers and private waste disposal companies, Coetzee is not happy with the landfill method used here, where garbage is taken to large enclosed sites, compressed and then covered with layers of topsoil.

These sites leak, he says, sending toxic leachate substances into our groundwater. Incineration of waste produces more harmful by-products and is no viable alternative.

The only solution, says Coetzee, is to create less waste and recycle as much as possible. Recycling saves on energy production and reduces the ever mounting waste pile.

Before long, perhaps the bulk of refuse will be recycled and the rest converted into fuel pellets, to burn with coal for electricity by night while we use solar energy by day.

One private company is looking to design a special domestic bin with various compartments, so recyclable material can be sorted into categories at its source.

Meanwhile, the Johannesburg City Council and private companies such as Frazer Alexander, have to deal with the disposal of the contents of 380,000 garbage bags collected in Johannesburg each week, the 826 tons of rubbish the Central Business District churns out a week and the 4,000 tons of garbage Greater Johannesburg produces each day.

Ray Lombard, president of the Institute of Waste Management, says the currently used landfill method of solid waste disposal is the most cost effective and environmentally sound if sites are designed and managed correctly, and could see us well into the future. "If you tighten the restrictions I don't believe there's a more economic way."

While the older, less well managed landfill sites around the country pose environmental problems, "the Johannesburg City Council is doing a good job", he says.

He admits that packaging is a major contributor to the refuse pile, but it can be recycled, prevents production losses and "should not be knocked".

Billy Hattingh, a director of Frazer Alexander, a waste company involved in all aspects of waste management, including the operation of municipal land refill sites, says South Africa is sadly behind in terms of the legislation governing waste disposal.

Johannesburg has no problem but "the percentage of properly operated sites is minute. Without the correct technology or plants, tremendous surface and underground pollution can result, causing a major health hazard. We need a lot more legislation with a lot more bite", he says.

Not enough money is allocated towards waste management, which is why municipalities are battling to buy the hi-tech equipment made available by private companies such as Frazer Alexander.

Johannesburg's daily waste is cleanly disposed of at three major sites: Robinson Deep, which disposes of 1,600 tons of refuse daily; Linbro Park, which caters for 700 tons a day; and Goudkoppies which consumes 1,200

tons of refuse each day. These three areas or landfill sites, absorb a combined amount of 1 million tons of refuse each year.

At Robinson Deep, mounds of refuse are combined with treated sewage, pounded into 450-mm layers by the ferocious-looking Trashmaster and then covered with another layer of topsoil, which is then compressed.

The layers of garbage and soil are compressed into cells of springy ground, designed to suit the surrounding environment and prevent water-logging which can lead to the eventual contamination of the groundwater.

When combined with water the refuse produces leachate, 200 times more poisonous than garbage which, if allowed to seep down, can contaminate the groundwater. Proper planning and compression should reduce this risk. When completed the sites are capped with soil, grassed and handed over to the nearby communities for recreational facilities like parks and soccer fields.

The two main by-products of refuse are potentially dangerous methane gas and carbon dioxide. AECI has developed a methane-extracting plant on the Robinson Deep site, and uses this refuse by-product for the production of cyanide.

Environmentalists claim that methane and CO₂ are harmful in large doses and contribute to global warming and the depletion of the ozone layer.

The city engineers argue that the alternative—incineration of waste—produces more harmful by-products in the form of acidic ash and is far too costly.

'Narrow Focus on Conservation' Criticized

91WN0632F Johannesburg THE WEEKLY MAIL
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[Article by Zaverh Rustomjee, researcher on mining, energy and the environment at the University of the Witwatersrand: "Dispossessed Must Have Their Say in Conservation"]

[Text] Conservationists have been criticized from various quarters on the basis that the issues they take up are often narrow and limited in relevance to the sharpening political and economic struggles in South Africa. Harsh and hurtful perhaps, but largely true.

Individuals have a right to be concerned about the preservation of dune forests, whales, turtles and cycads, but what is often omitted in their arguments is that environmental degradation also has an impact on the lives of people.

Yet conservation issues have a potential. They can, firstly, reach, inform and mobilise a far broader audience and, secondly, lead to a more sustainable form of conservation. But to achieve this, the spotlight must be widened.

The need for conservation arises out of social and political processes which have disregarded the environment and some of its inhabitants. A failure to recognize this is actually damaging even to those narrow conservation objectives that are presently being pursued.

A case in point is that of dune mining in St. Lucia, Natal, and Wavecrest, Transkei—an issue brought into public view by conservationists, but one which many rural communities and workers have had to face and continue to face, be it in regard to gold, asbestos, chrome, platinum, coal or other mines.

What have been the failings of the narrow focus on conservation? Firstly, the impact of dune mining is viewed from the perspectives of the conservationists. The thrust of this issue then becomes a lament about dying species of trees, birds and endangered wildlife, largely in terms of how this affects the tourists and nature lovers who come and enjoy the scenic beauty on weekends.

The second failing is that there is no link between the mining of dunes and the problems and struggles of the people living in the affected areas. These combined failings reduce the issues to technical ones, namely that mining operations pollute through noise, wastes and so on, destroy animal, bird and plant species, affect the water table and thereby impact on the delicate ecological balance of the area.

In response, mining companies have with all seriousness, directed their vast resources to overcoming these technical problems.

Dune mining companies have minimized noise, no chemicals are used, animals and birds are allowed to move around and away from the particular strip being mined, and the indigenous forest is being recreated within 10 to 12 years. Water for mining is not drawn from Lake St. Lucia but from dams far afield and mining companies are allowing their proposals to be subject to independent, public and very detailed environmental impact assessments.

All the experience gained by mining companies in their global encounters with the environmental movement are being brought to bear.

Consider how rapidly a transnational mining company with a low-profile operation in St. Lucia for the past 15 years is today catapulting itself into the public eye with full-page advertisements in the very newspapers that have carried articles critical of its proposals.

It has thrown open its operations to the public through conducted tours which require a team of highly paid public relations and technical personnel. Compared to the ailing gold mining industry, this exposes the lucrative nature of dune mining operations.

Thus conservationists have lost the opportunity to expose the social and political processes that have led to the need for conservation in the first place.

In the process, the issues concerning the costs and benefits of dune mining have been sidestepped, both by conservationists and mining companies alike.

At the broadest level, the parties involved include the residents of the area, those employed in the operation, the unemployed, the mining corporation, the local authority and the state.

Do all benefit equally? If so, what are the costs and who bears them? It is difficult to calculate whether costs and benefits are shared equally because of the secrecy which surrounds the exports of certain strategic minerals from South Africa.

Throughout this debate, however, the more important questions that concern the people living and working in St. Lucia, Wavecrest and indeed in areas affected by other forms of mining have not been raised. What kind of say do they have in the decisions to be made?

Were people living around the St. Lucia area presented with the options at hand before mining began in 1976?

Did people living in areas decreed to be game parks or heritage sites or Bantustans ever participate in the decision to proclaim them as such? Is it enough that people who have been living on these potential mines be relegated to merely working for the mining company for the 30-year life of the mine? Do they not own the land? If not, who does and how did that come to be, and what happens after the mines are worked out? What consideration is given to conditions of work?

These are not just abstract questions but expose the real issues that are in question for beneath the concerns of the conservationist lies the legacy of apartheid which has systematically disempowered the communities concerned.

Environmentalists Protest Titanium Strip Mining

91WN0632E Johannesburg *THE WEEKLY MAIL*
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[Article by Eddie Koch: "Opponents Square Off in the Battle for St. Lucia's Dunes"]

[Text] Conservationists and a large mining company are involved in a large-scale public relations battle over the proposed titanium mining at Lake St. Lucia.

Titanium has some rare qualities including, it would seem, an uncanny ability to reflect new trends of thought in South Africa's burgeoning green movement.

The battle for the dunes of St. Lucia, a small stretch of windswept pine forest and grassland on the shores of northern Natal, generated a wave of environmental awakening as thousands of people signed petitions to prevent a foreign-owned corporation from stripping the dunes of their lucrative black grains of the heavy mineral.

That battle is heating up again as environment activists this month launched a new and ambitious campaign to protect the area and Richards Bay Minerals (RBM) began a high-powered public relations drive to convince the public that mining the dunes would not harm the rare ecosystems to be found in the St Lucia estuary.

The original campaigns around dunes were fatally flawed. They ignored a basic tenet of effective conservation in the Third World: the need to include local communities in decisions about the way in which the environment they live in is to be handled.

Within two years, as apartheid gets dismantled and black communities face the prospect of wielding political power, that has all begun to change.

RBM has nearly completed a massive environment impact study, reported to have cost in the region of R2.5-million, which has gone out of its way to include the views of workers in the company and rural communities living on the edge of the St. Lucia nature reserve, in which the dunes are located.

The study has been described by international experts as involving these communities to a greater extent than most environment impact assessments. "It is unique in that public involvement is utilised early in the process and social impacts are considered in such detail," said Professor Rabel Burdge, president of the International Association for Impact Assessment.

Guy Butler Adam, charged with investigating the economic and social impact of the proposed mining scheme, told *THE WEEKLY MAIL* that two trade unions active at RBM, as well as squatter communities living in the forests adjoining St. Lucia, had been asked to comment on the implications of the mining.

Mike Mabuyakhuli, organiser for the National Union on Metalworkers—which represents most black workers at the company—confirmed that Numsa had been consulted and was waiting for the draft report to be tabled before making detailed comment.

And the activists on the other side, who originally ignored the workers and rural villagers who would be most affected by mining, have also mended their ways. Members of the Campaign for St. Lucia, a coalition of green groups led by the Zululand Environment Action League (Zeal) and Earthlife Africa, have been to speak to the union about their fears for the rare plant and animal life to be found on the dunes.

But it will not be long before the voices of the dispossessed are added to the debate about St. Lucia. As the articles on this page argue, the time has long passed when ordinary men and women can be excluded from decisions about how to protect the environment.

Transkei Fisheries Endangered

91WN0632G Johannesburg *THE WEEKLY MAIL*
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[Article by Eric Naki: "'Free-for-All' Fishing in Transkei"]

[Text] As the Transkei military government delays a long-overdue decree on conservation, there is mounting concern over "free-for-all" fishing off its coast.

The environment conservation legislation is still being considered by legal advisers, according to a senior source in the Department of Nature Conservation. It was due to have been implemented in April, but has been held back because of other "more urgent" matters.

But conservationists are concerned at the danger to the area's fish stocks posed by foreign fishing vessels exploiting the situation. Not only is there a lack of legislation, but Transkei is unable effectively to patrol its coast. It lacks the personnel, the helicopters and patrol vessels, and the expertise to do the job.

Conservationists say there has been an influx of fishing vessels off the Transkei since the Gulf war, as part of the overall increase in sea traffic off the South African coast.

Among the countries that are known to have frequented the area are Panama, Taiwan, Spain, and Korea. Their trawlers ignore the 200-nautical mile exclusion zone and are believed to use "wall of death" gill nets, prohibited in South Africa.

Director (Conservation) of the Wildlife Society Keith Cooper says frequent verbal reports of the movement of vessels are received, but the society cannot do much about them except to alert the authorities. "The society acts as the eyes and ears of the law and not as law-enforcers. We are extremely concerned about the lack of routine patrols on the Wild Coast."—elnews

KaNgwane Tree Project Seeks To Ease Fuel Wood Shortage

91WN0632I Johannesburg *THE WEEKLY MAIL*
in English 4 Jul 91 p 7

[Article by Eddie Koch: "A Fast-Growing Little Tree That Solves Lots of Knotty Conservation Problems"]

[Text] *Luceana lucophela*. That's the name for a small tree that can, within a few years of being planted, provide a solution to a big problem.

The kaNgwane Parks Board has started a project to encourage the planting of these exotic trees—which can provide rural families with much of their fuel, fertiliser, fodder, furniture materials and indigenous pharmaceuticals—in the homeland in the hope that this will help solve the crisis of deforestation in South Africa.

Destruction of trees by rural people desperate for fuel is becoming one of the country's most pressing environmental problems.

Research by Doctor Anton Eberhard, director of the Energy Research Institute at the University of Cape Town, shows that, in the absence of electrification, women in rural homelands travel an average of six to nine kilometers a day in search of fuel for cooking food and heating their homes.

On each trip a woman collects an average load of 30 kilograms of wood. If that rate continues he estimates the country's natural woodlands will be almost entirely denuded by the year 2020.

"The *Luceana lucophela* tree is not indigenous to the area but it is also not an invader that threatens local species," says Lesley Vos, community relations officer for the kaNgwane Parks Board. "And the tree is an incredibly fast grower. Within two years of planting its branches begin to provide firewood and it has been estimated that within five years a group of 60 trees will keep a family of four supplied with all their energy and wood needs for 80 years."

The Parks Board has encouraged Sappi's local timber company to donate trees to the project and these are sold to villagers at a subsidised rate of 20c for each sapling.

The scheme is small and in its early stages but she believes it will provide a model for others to follow.

Another purpose of the project is to help preserve indigenous tree species in kaNgwane's Mthethomushwa Game Reserve. Located some 400 kilometers east of Johannesburg on the southern border of the Kruger Park, the area has been set aside as a haven for plant and animal species that are under threat from the pressures of poverty.

Local tribal chief Charles Bongani donated the land to the homeland's conservation authorities on the understanding that his people would receive revenue from tourism.

Another way of encouraging local people to support the reserve, rather than see it as an institution that has deprived them of valuable resources, is the way traditional healers are allowed into the park to collect roots, herbs and bark from trees that are required for medicinal purposes.

"The sangomas are very influential in the community and they realise that we are protecting trees and other resources that are important for their profession," says Mthethomushwa ranger Chris Greathead. "So they tell the local villagers not to strip the reserve of wood or poach for animals. That's why we seldom have major poaching problems."

Vos believes it is not enough to fence off the indigenous plant and tree life in the reserve and then win approval from community leaders for this practice. "We need to

provide people who would have used the resources in the park for energy with an alternative source of fuel."

Thus the tree-growing project in the villages around the park, designed to alleviate pressure on Mthethomushwa's plant species, at the same time is helping to counter the destruction of trees and shrubs outside the reserve.

—Trees for Africa, a project designed to encourage the growing of trees in suburbs and townships around the country, reports that since it was launched in August 1990 it has encouraged the planting of 158,093 trees—an average of 566 a day.

The organisation is planning a major tree planting drive to celebrate National Arbor Day on August 9. Details can be obtained from Trees for Africa, PO Box 18, Johannesburg, 2000.

Stock Farmers Protest New Park's Boundaries

91WN0632H Johannesburg *THE WEEKLY MAIL*
in English 4 Jul 91 p 7

[Article by Gaye Davis; "Stock Farmers Threaten Richtersveld Park"]

[Text] After nearly 18 years of wrangling, the Richtersveld National Park accord is due to be signed on July 20. But the ceremony could be scuttled by some stock farmers, unhappy over the park's boundaries. Gaye Davis reports from Cape Town.

The signing of the historic Richtersveld National Park agreement has been set down for July 20—but could yet be torpedoed by a group of dissatisfied stock farmers.

The farmers, said to number about 75, claim the proposed 162,000-hectare park's boundary lines have been drawn in such a way as to deny them access to vital water sources in the arid region.

Their spokesman, Gerrit Cloete, told *THE WEEKLY MAIL* that while the farmers were not opposed to the park as such they were unhappy about the boundary lines and the way in which negotiations over the park had been conducted.

"The media are now full of stories that the park is going ahead but you must put in your report that there is no consensus over the July 20 signing," he said.

"We are not a 'park resistance movement', but there are several sore points which we felt should be listened to before the signing," Cloete said. "We will be sending a fax to (Labour Party leader) Allan Hendrickse putting our case."

Cloete is a former Northern Richtersveld management committee member. He and all his colleagues were recently suspended pending a committee of inquiry's report into allegations of mismanagement and maladministration in the region.

The head of rural development in the House of Representatives, Kobus Boshoff, said this week the report, by Cape advocate Willem de Haan, had been completed but had yet to be laid before Minister David Curry, who recently took over the portfolio of local government, housing and agriculture after the resignation of minister Andrew Julies.

Julies caused an outcry in October last year when, after months of intricate negotiations and elaborate preparations for the signing ceremony by the local community, he flatly refused to take part at the last minute.

He was said to be unhappy at not being consulted about the form the ceremony—which included a Surplus People's Project speaker—would take.

Later it emerged he was also concerned about residents of the Southern Richtersveld, who wanted to be included in the contractual agreement.

Subsequent negotiations with the communities of the North and South resolved this problem—and it seemed the signing could go ahead. But now it is in doubt again.

National Parks Board officials and conservationists have been lobbying for the past 18 years to have a national park declared in the region, which nestles in the loop formed by the Orange River on its way to the Atlantic coast and represents a unique ecosystem.

An agreement creating a park was originally to have been signed in March 1989 but was stopped when residents launched an urgent court interdict: they had not been informed of negotiations between the Parks Board and the House of Representatives and the proposed park would have meant stock farmers being forced off the land they had used for generations.

Their victory and subsequent involvement in negotiations led to a new agreement—one which promised to put South Africa at the forefront of new approaches to conservation.

Instead of being shunted off the land with paltry compensation, they would become an integral part of its management. Not only would a unique ecosystem be conserved, but also a unique culture—that of the Nama people.

The National Parks Board agreed to lease the area for R80,000 a year, to be paid into a trust earmarked for community development and administered independently of the local management committees.

Profits from a succulent nursery, to be established within a year of the park's declaration, would also go to the trust.

Stock farmers would still be allowed to graze their animals in the region, albeit in decreased numbers.

The park itself would no longer be run exclusively by the Parks Board, but in partnership with the community.

National Parks Board head of public relations and marketing Braam van der Vyver said this week he was aware of "a few" who were "not too keen" on the park.

"But I think the majority of the people are behind it. It can only be for their benefit: if you can generate tourism to the area it will create jobs.

"It will be the first park of its kind—one where the needs of the people as well as plants and animals have been taken into account."

For ethno-botanist Fiona Archer, the signing on July 20—if it takes place—will come not a moment too soon. Present lack of controls means the plunder of rare succulents, later sold at vast profit, continues apace. Recently a motor manufacturing company came under fire for staging a test-rally of four-wheel drive vehicles in the area, to the detriment of the environment and the outrage of residents.

Willem de Wet, the Kuboes resident in whose name the court application halting the first, faulty agreement was brought, was hopeful this week that by July 20 the park would be a fact. "We are looking forward to it," he said. "We need it."

But he was deeply concerned about what he described as "attempts to divide the community" on the merits of the park in an apparent bid to scuttle the signing.

ANC Document Backs Private Wildlife Programs

*MB1209161591 Johannesburg BUSINESS DAY
in English 12 Sep 91 p 7*

[Report by Darius Sanai: "ANC 'Yes' to Private Wildlife Programs"]

[Text] The ANC [African National Congress] has tacitly advocated wildlife conservation as practised by SA's [South Africa] exclusive game lodges in a recent policy document on the environment.

The document, prepared by the ANC's economic planning department, states that game reserves and resorts represent a "significant and viable land-use option".

This concurs with "progressive conservation" theories propounded by many of SA's exclusive game lodges, which stress that a combination of wildlife management, revenue through tourism and employment for the local populations provided by the game lodges is the only way to stimulate rural economies while sustaining wildlife conservation.

The ANC document adds that wildlife management offers "the only ideal balance between human economic activity through tourism and environmental conservation", which is also in line with the conservationists' view.

The ANC two years ago stated it had "no policy" on conservation, and conservationists see the document as a

sign of cautious advance by the ANC on an issue that holds little interests for much of its popular base.

"Nine out of 10 people in Soweto have never seen many of SA's wild animals, so it is unrealistic to expect them to care about conservation," says National Environment Awareness Trust (NEAT) spokesman Marek Patzer. Patzer says some of SA's environment agencies still have a "First World attitude" towards conservation, an attitude described by SA Nature Foundation director John Hanks as "promoting preservation...in total isolation from Africa's social and environmental problems".

He says First World attitudes towards conservation and "saving each and every elephant" cannot apply to a country like SA with a massive, poor, rural underclass.

These people cannot be expected to worry about conserving nature when their first priority is their own survival, according to Patzer. But rural populations are increasingly realising that the only way to social upliftment is through involvement in game resorts.

Londolozi's Dave Varty, one of the pioneers of progressive conservation philosophy, says the benefits of the tourism industry for rural populations extend far beyond the wages earned by employment.

"Each wage-earner employed by the lodges supports between five and eight people," he says. "But there is an entire local industry that is spawned, together with the multiplier effect from the incomes generated."

ANC Policy Document Proposes Subsidies for Ecology-Friendly Firms

*MB1109180091 Johannesburg BUSINESS DAY
in English 11 Sep 91 p 1*

[Report by Darius Sanai: "ANC [African National Congress] Aims for Eco-Friendly Industry"]

[Text] An ANC [African National Congress] government would subsidise firms which made their operations environmentally friendly and penalise those damaging the environment, according to a recent policy document.

Noting the high levels of harmful emissions by SA [South African] industry, the document said "various incentives will be explored to reward industrialists who develop environmentally sound technologies".

Conversely, "commensurate penalties need to be instituted" against industries which damaged the environment, according to the document drawn up by the ANC's department of economic planning.

The proposals, if implemented, would be in line with modern economic theory on controlling pollution in a free market economy, SACOB [South African Chamber of Business] economist Ben van Rensburg said yesterday.

"The market is incapable of picking up the costs or benefits of externalities like pollution and environmental control. The government must therefore tax or reward firms in line with their actions on pollution," he said.

The document also proposed a zoning system for industries that damage the environment and pose risks to human health.

ANC Manifesto Emphasizes 'Sustainable' Land Use

*91WN0632B Johannesburg THE WEEKLY MAIL
in English 4 Jul 91 p 2*

[Article by Jennifer Pogrand: "Apartheid's Land Crisis"]

[Text] The ANC's [African National Congress] land manifesto emphasises the need to make rural producers more efficient and for land to be used in a sustainable manner.

Degradation of the environment and a "national agricultural crisis of massive proportions", are two of the consequences of apartheid land policies, according to the African National Congress's recently released land manifesto.

The document, which will be presented at the ANC's national conference next week, lays heavy emphasis on the need to make rural producers more efficient and for land—"a national and natural resource"—to be used in an appropriate and sustainable manner.

It states this can only be done by involving people who live and work on the land directly in planning and reform.

"The land question carries with it serious environmental problems, particularly because of the fragile land base," says David Cooper, a member of the ANC's land commission.

"And apartheid policies have exacerbated these, especially in the homelands."

Forced removals, relocation to the homelands and the resultant overcrowding has led to overgrazing and massive soil erosion. In this way, says the manifesto: "apartheid has destroyed the productive capacity of rural black producers".

Elaborating on the dire impact of current state agricultural policy, Cooper says the government's subsidy system, aimed at assisting commercial white farmers, has encouraged these producers to adopt farming practices which abuse the land.

"Propping up farmers' incomes with the maize subsidies, for example, has led to over-production in nonviable areas. Land not suitable for maize farming has been ploughed up. In essence, the wrong environment has been used."

The figures speak for themselves: for every ton of maize produced, 20 tons of topsoil are lost.

"Tax concessions encourage farmers to buy expensive equipment, and there are subsidies on grain, diesel and fertilisers. This in turn has spurred over-mechanisation and the excessive use of agricultural chemicals."

With the increasing reliance on chemicals comes pollution. Pesticides leach through the soil, and find their way into the water supply.

"Farmers are going up a dead end. They need to pedal harder and harder, and get deeper into crisis and debt," Cooper says.

Agenda for Conference on Sustainable Development Outlined

91WN0692C Johannesburg THE WEEKLY MAIL
in English 1 Aug 91 p 25

[Article by Eddie Koch]

[Text] Eskom and the newly formed Industrial Environmental Forum of Southern Africa, which represents the cream of South African industry, have organised a major conference on sustainable development for October.

Central to the conference agenda are the principles of the Business Council for Sustainable Development, an international group of industrialists promoting the concept of sustainable development in business circles. The principles include:

- Use of clean production technologies to minimise use of raw materials, energy use and the generation of wastes.
- The transfer of such technologies from industrialised countries to Third World countries.
- Uniform environmental, health and safety standards irrespective of where a plant is located in the world.
- Internal environmental audits that are a central aspect of reports to shareholders and employees.
- Incentives for workers who are environmentally conscious and perform tasks according to management's objectives.
- Promoting environmental literacy by including environment management principles in training programmes.

However, the trade union movement has some different ideas about how environmental protection can be harnessed to economic growth.

"Obviously we welcome the fact that management is beginning to look at some of these ideas," said Shirley Miller, organiser for the Chemical Workers' Industrial Union (CWIU).

"We have been urging that corporations adopt the same health and safety standards around the world. This prevents dirty industries from relocating to poor countries where environmental legislation is not as strict as in Europe or America."

But other aspects of the Business Council's programme are less exciting to CWIU, an affiliate of the Congress of South African Trade Unions [Cosatu] with a strong interest in environmental matters. The union is not happy about environmental audits being conducted internally by management. An external and independent body should conduct these and it should include representatives of unions and communities living around the factory, says Miller.

"We also don't like the idea of incentives for environment performance. This suggests victim blaming and can be used to excuse management for not introducing production processes that allow for as few mistakes as possible. It's not up to workers to make dangerous conditions safe."

Alec Erwin, economist for Cosatu, agrees with this view adding that environmental protection will never work on a voluntary basis. "Nor can we rely on the state, now or in the future, to ensure this kind of protection. What we are arguing for is a strong network of organisations in civil society—unions, civic organisations and green groups—that will watch over the state of our environment and lobby for effective action to protect it."

Miller stresses that effective transfer of clean technologies will require state intervention. "We encounter a tremendous degree of secrecy among managements about their technology and they use the argument that they need secrecy to maintain a competitive edge over their opponents. This is rife in the chemical and oil industries and prevents a voluntary exchange of technology. There has to be some form of state enforcement here."

Erwin says transfer of technology will not be effective if it happens in a haphazard way. "It must be planned and coordinated with a strong view to environmental impact of these technologies."

The union movement prefers the Valdez Principles, drawn up by the U.S.-based Coalition for Environmentally Responsible Economics to those of the Business Council. The principles include:

- Compensation for communities affected by industrial pollution and serious efforts to restore problems caused by pollution.
- Full disclosure of a plant's operations that cause environment or health problems.
- Environmental audits by an independent body which will be made available to the public.
- Efforts to completely eliminate the release of pollutants and creation of waste.

Organisers of South Africa's business conference in September say a range of unions will be invited to participate. The event will, no doubt, encourage the debate that is developing between labour and industry over environmental safety.

Atomic Energy Corporation's Focus on Environmental Issues Detailed

Environmental Services to Government, Industry

*91WN0712A Johannesburg FINANCIAL MAIL
in English 16 Aug 91 p 24*

[Text] Elemental issues of ecological preservation and pollution of the environment rate high on the index of current social concerns.

Some may see it as ironic that the Atomic Energy Corp (AEC), as part of the nuclear industry which has so often been a target of those who profess to be concerned with the environment, is also vitally interested in these issues. Indeed, its Earth and Environmental Technology (EET) division provides highly sophisticated environmental services to government and industry.

Within EET are gathered specialists in many disciplines, including geology, geophysics, geohydrology, geochemistry, geostatistics, geological computing, petrology, mineralogy, atmospheric and environmental sciences, numerical modelling, seismology and surveying.

These disciplines can be combined or be used in isolation to tackle a wide range of projects from the simplest to the most complex. Highly skilled personnel are supported with sophisticated computers and modern survey and geohydrological instruments. Effective project management which enables human and physical resources to be combined efficiently and cost-effectively, mean that projects are completed on time and within budget, claims EET.

It is hard to exaggerate the importance of many of the projects in which the division is involved. For instance, the effective management of water resources is vital if these resources are to be preserved.

EET's expensively gained knowledge and proven abilities to solve problems of immediate concern contribute directly to preserving lives, industries and such ecological marvels as the Okavango Delta.

Focusing on a specific major problem, large areas of southern Africa are arid and rely almost exclusively on groundwater (defined as water in the ground, as opposed to surface water) which needs to be protected from over-exploitation. In areas where the recharge of the aquifers (water-bearing strata) from surface water is virtually nil, groundwater is effectively being mined and diminished within the span of a human lifetime.

Dewatering of an aquifer has a major environmental impact. Only effective control of the process will allow for the prediction of the behavior of the system, thereby

reducing potential problems, including litigation. Quite simply, the need to optimize its utilization and halt, even reverse, its pollution requires understanding of complex geohydrological equations which reduce to the fact that only by careful management will a balance be struck between extraction and recharge.

Identification of polluted areas is enhanced by using geophysics, chemical analysis and computer-based imaging techniques of existing boreholes. Isotopes produced by AEC are used selectively to determine aquifer characteristics. The data can be modelled using computer-based techniques which provide guidelines for effective groundwater management.

Air pollution is another problem area which EET addresses. With its strict regulatory codes of practice, the nuclear industry itself demands high-efficiency meteorological and atmospheric monitoring, prediction and modelling capabilities. This comprehensive capability is now available to a wider market.

Atmospheric tracer studies can be conducted to determine the potential impact of atmospheric pollution on the environment and to identify pollution sources.

Air pollution dispersion models are used to calculate the effects of both routine and emergency releases to the atmosphere. Boundary layer studies are used to evaluate the optimum height of stack emissions to minimize ground-level atmospheric pollution concentrations and optimize industrial site planning.

In implementing a successful air pollution management strategy, each case is thoroughly evaluated and a package is designed to deal with the specific situation. An air polluting industry, for instance, may require on-site automatic weather stations. These can be installed, maintained and the data can be routinely processed into management reports, using AEC services.

Many of the services can be linked to statutory requirements for the siting and operation of facilities. In the case of radioactive emissions, dose assessments can be conducted for licensing and professional technical evaluation and advice can be provided in the event of litigation.

Fields of application include the petrochemical and chemical industries, gas producing plants, power stations, incinerators, iron and steel works and waste-disposal sites.

The AEC's aerosols division offers specific air filtration, aerosol, air quality and measuring services to the government, medical, pharmaceutical, electronics and manufacturing sectors, and for such highly specialized requirements as those of microbiological laboratories where viruses and bacteria are cultured.

In addition, the corporation operates an independent test laboratory to assist users of air purification systems and clean-air zones with filter efficiency determinations and compliance with specifications.

Implementation of Waste-Management Projects

91WN0712B Johannesburg *FINANCIAL TIMES*
in English 16 Aug 91 pp 27-28

[Text] It is a frightening thought that no one knows how much chemical, hazardous or toxic waste has been, and is being, produced in South Africa. No less frightening is that the lack of adequate controls have resulted in some areas having been adversely affected by ill-advised methods of waste treatment and disposal.

This is a highly emotional issue. When, some two years ago, the FM ran a cover story advocating the establishment of properly managed facilities to treat and dispose of hazardous waste, the response was almost uniformly hostile. Most people, it seems, do not want the problem managed, they just want it to go away.

"We should simply ban the production of all hazardous waste," one bright spark volunteered, apparently not realizing that doing so would outlaw the production of a vast range of useful products from synthetic fuels and drugs to computers and consumer goods.

The problem isn't going to go away and the longer the imposition of adequate controls is postponed, the greater will be the damage to the environment. Quite simply, lack of proper controls and facilities encourages dumping.

Some—inadequate—legislation does exist and responsible organizations comply, often with the help of the Atomic Energy Corp (AEC), which has been responsible for implementing a number of successful waste-management projects.

Projects are assessed individually and a solution is designed to deal specifically with each unique situation, be it the selection of a disposal site or remedial action to an existing site.

Sites are chosen to satisfy the requirements of the population, industry and the environment. With this in mind, a regional evaluation is undertaken to determine the long-term demographic changes likely to take place, the relevant geotechnical considerations, the impact on the environment and the cost-effectiveness of proposed locations.

Based on a careful assessment of the containment efficiencies of the site to avoid contamination, the facility is designed and constructed.

Monitoring facilities are incorporated to ensure safe operation.

The biggest hazardous waste site developed by the AEC is the National Facility for the Disposal of Radioactive Waste at Vaalputs in the arid Bushmanland region of the northern Cape, south-west of Upington. Despite the name, few Bushmen—or any other people—have ever lived there, for this is a region of almost zero rainfall that is unsuitable for agriculture of any kind.

Surveys have established no potential for mining. The region has been geologically stable for millions of years and is, in short, an ideal site for the purpose. It is the envy of nuclear engineers in many developed countries that do not have facilities remotely as good.

The disposal concept is based on the premise that, for at least 50 years, the disposal facility will be managed by man. Thereafter, the geological environment will continue to preserve the integrity of the radioactive waste entrusted to it. Vaalputs is, therefore, not just a hole in the ground, dug to hide the wastes of our energy-hungry industry. It was chosen after immensely detailed scientific analysis. Many of the typical problems associated with disposal of hazardous waste were "selected out" to ensure the safety and long-term integrity of the site.

Care was taken to evaluate the probability of radioactivity escaping from the immediate confines of the disposal site. For this the AEC used highly sophisticated geological, geochemical and geohydrological techniques, some of which were specifically developed to determine the multitude of parameters ultimately required for the modelling of the transport scenarios.

These methods are being offered to the mining and other industries to solve their problems of siting waste-treatment facilities and disposing of even the most hazardous waste.

AEC executive GM Anthony Jackson acknowledges that the whole issue is highly sensitive. The public needs to understand the difference between dumping and careful management of hazardous wastes, he says. "Managed properly, toxic waste is not dangerous. The danger is not managing it properly."

Vaal Triangle Respiratory Ailments Linked to Pollution

MB1809140291 Johannesburg *BUSINESS DAY*
in English 18 Sep 91 p 2

[Report by Darius Sanai; "Ailments Linked to Pollution"]

[Text] Vaal Triangle residents suffer levels of bronchitis and respiratory diseases markedly higher than the SA [South African] average because of the high pollution levels in the area, a new study has found.

The Vaal Triangle Air Pollution Study, being conducted by scientists from the independent Pretoria-based Research Institute for Environmental Diseases, shows that people living in the Vaal Triangle run a greater risk of contracting bronchitis and upper respiratory tract diseases.

Allergies are also more common in this area than the national average.

A source close to the project—who spoke on condition of anonymity—said yesterday that the illnesses were directly linked to the high levels of particle pollution in the area.

Smoke from township coal fires and from heavy industry in the area was responsible for the air pollution, the source said. The exact contributions by each source was not yet known, but would become clearer later in the project, and through the findings of a "source apportionment study" being carried out by Wits [Witwatersrand] University scientists.

More than 10,000 white children and 1,500 black children were being tested in the Environmental Diseases Institute study, which is still in its early stages.

The source said sulphur dioxide levels had been found to be within safety limits.

But particulate, as distinct from gaseous, pollution in the area was much higher than average. The offending pollution consisted mainly of carbon and iron compounds, which came from the Iscor [South African Iron and Steel Corporation], Usko [expansion unknown], Samancor [expansion unknown], Eskom [Electricity Supply Commission] and SASOL [South African Coal, Oil and Gas Corporation] plants.

Science Commission Launches New Environmental Magazine

OW1609083391 Beijing XINHUA in English
0814 GMT 16 Sep 91

[Text] Beijing, September 16 (XINHUA)—A new magazine devoted to the study of population, resources and environment has been launched by the State Science and Technology Commission.

The magazine, entitled: "China's Population, Resources and Environment," will be devoted to theoretical articles concerning the policies, methods and regulations of the party and government.

Extending congratulations on the launching of the magazine, Liu Dongsheng, a division member at China's Academy of Sciences, expressed hope that the magazine would help promote mutual understanding and mutual exchange between the Chinese people and the people of the rest of the world in solving the problems of population, resources and environment that face mankind.

"We have only one earth," he said. "And it is the common responsibility and obligation of the whole of mankind to take up the challenge, effectively solve the problem of population, resources and environment and realize the goal of coordinated development."

He noted that the launching of the magazine is extremely timely because China is facing an acute problem of population, resources and environment.

Liu said that as a scientific and public opinion voice, the magazine will promote scientific research, help to solve problems in these areas, and help people understand that population and resources should be coordinated with environmental factors.

Support for 'Peaceful Uses' of Nuclear Energy Affirmed

OW1709061291 Beijing XINHUA in English
0529 GMT 17 Sep 91

[Text] Vienna, September 16 (XINHUA)—China today reaffirmed it would work for peaceful uses of nuclear energy, international cooperation in this field and opposition to nuclear weapons proliferation.

China's position was given by head delegate Jiang Xinxiong who was addressing the 35th session of the International Atomic Energy Agency (IAEA) which opened here today.

"Nuclear power generation constitutes an important aspect of the peaceful uses of nuclear technology," he said.

Nuclear power has won widespread recognition as a clean, safe and economical source of energy and has a role to play in solving current environmental problems such as air pollution, acid rain and the greenhouse effect, Jiang said.

We should strengthen international exchanges and cooperation in the development of nuclear power generation and seek to develop and spread a safe and efficient atomic reactor, he said.

Jiang said helping Third World countries to develop nuclear power industries should become a major goal for the international community, particularly the IAEA.

He also briefed the conference on China's efforts to promote peaceful uses of nuclear energy and thus better harness it for the benefit of mankind.

China's nuclear industry has always given top priority to safety precautions and test results have shown the safety of China's nuclear reactors to be at a relatively high level, he said.

"The irradiation impact on the environment of China's nuclear industry over the last three decades has been very small," he said.

"Its negative impacts have been negligible compared to those that exist naturally or arise from other human activities," he added.

He said China would actively participate in international cooperation over the peaceful uses of nuclear energy and it had already made and would continue to make a contribution to this end.

The Chinese Government has always taken "positive, prudent and responsible policies" in the field of nuclear power, he said.

China pursues the three principles of exclusive use for peaceful purposes, acceptance of IAEA safeguards and nontransferral of nuclear technology to third countries without prior consent, he said.

Jiang said China has not transferred and has no plans to transfer any sensitive nuclear technology or equipment involving uranium enrichment and heavy water production.

He also reaffirmed Chinese Premier Li Peng's August 10 declaration that Beijing had decided in principle to accede to the nuclear nonproliferation treaty.

The Chinese Government supported the three major objectives of the treaty, he said.

The 1970 accord called for the prevention of nuclear proliferation, the promotion of nuclear disarmament and international cooperation in the peaceful uses of nuclear energy.

"China has always discouraged and refused to engage in nuclear proliferation or to help other countries develop nuclear weapons," Jiang said.

At today's conference, Yemen and the three Baltic countries of Lithuania, Latvia and Estonia were admitted to the IAEA, bringing the total number of member nations to 116.

The conference is due to end on Friday.

Northern Afforestation Project Deemed 'Great Success'

OW1809215091 Beijing XINHUA in English
1511 GMT 18 Sep 91

[Text] Beijing, September 18 (XINHUA)—Some 7.42 million hectares, or 80 percent of the total forests China has planted in the north, northeast and northwest, are well preserved after 11 years and have achieved great natural, economic and social success.

According to an official from the Ministry of Forestry today, the success of the forest shelter belt was apparent from data recorded during one-year survey of "the three norths" region, which covers 42 percent of the country's territory.

The shelter belt program which began in 1978 and is scheduled to be completed by the middle of the next century, is only one of China's many large-scale environmental projects.

The official said the shelter belt project has protected 11 million hectares of farmland which was once adversely affected by severe wind and sand storms. The shelter belt has helped to increase output by 10-30 percent, and over nine million hectares of wasteland have been reclaimed, while serious soil erosion has been controlled on over 14 million hectares.

The project has altered the speed, scale and efficiency of China's afforestation effort, said the official.

However, he pointed out that the afforestation efforts still face the problem of a funds shortage and that the forests are threatened by worms.

Zou Jiahua Stresses Need To Harness Water Resources

HK2709103791 Beijing XINHUA Domestic Service
in Chinese 1339 GMT 18 Sep 91

[By RENMIN RIBAO reporter Jiang Yaping (5592 0068 1627) and XINHUA reporter Zhao Peng (6392 7720)]

[Text] Beijing, 18 Sep (XINHUA)—State Council Vice Premier Zou Jiahua emphasized today that like agriculture, energy, transportation, and raw materials, water resources is a basic industry which affects the sustained, stable, and coordinated development of the national economy. Governments at all levels should stand from this high plane, map out plans addressing the use and protection of water resources, pay great attention to water irrigation projects, and join efforts to solve the water conservancy problem.

Zou Jiahua made the statements at a State Council meeting on harnessing the Huai He and the Tai Hu. He said that the Huai He and the Tai Hu were seriously affected by disasters this year which, in turn, destroyed

the economic and daily order along the two deltas. Some comrades from the disaster areas said: Wealth accumulated over the years were washed away by one single flood. This is a profound lesson which fully demonstrates that unless water is harnessed and corresponding water irrigation projects well implemented, the national economy will not develop in a sustained, stable, and coordinated manner.

Zou Jiahua said: The important position of water resources was given full consideration in the Eighth Five-Year Plan and the Ten-Year Plan. In drawing up their economic development plan, all localities should also address the problem of water resources in line with the sound growth of the entire economy. Water is not only an issue in agriculture, but it should be seriously taken into account in the planning of all industrial construction projects.

Speaking on how to carry out water irrigation projects effectively and assert genuinely the importance of water resources, Zou Jiahua emphasized the need to "map out plans, integrate links among departments and regions, define responsibilities according to levels, and realize joint harnessing efforts." It is necessary to mobilize the initiatives of the central authorities, localities, and people. Input from the central authorities shall be used primarily in the comprehensive harnessing of the seven great rivers and five big lakes, namely: The Chang Jiang, Huang He, Huai He, Hai He, Zhu Jiang, Songhua Jiang, Liao He, and the Tongting Hu, Panyang Hu, Chao Hu, Tai Hu, and the Hongze Hu. Within the spheres of their own jurisdiction, governments at all levels should also mete out a certain amount of financial resources, determine key points, and carry out effectively the water harnessing endeavors in the deltas and regions of their localities.

Zou Jiahua said that the harnessing of water resources concerns such areas as soil and water preservation, afforestation, power generation, irrigation, clearing of waterlogging, ecological environment, and aquatic products. While some of these areas can be attended to by the water irrigation departments, others would require the assistance and coordination from other departments. The harnessing of water resources is the business of the entire society and all sectors and trades should work together to carry out water irrigation projects effectively.

Zou Jiahua stressed that the business of harnessing water resources is very complicated and tedious and, in particular, the projects concerning the big deltas would involved a great many conflicts. It is thus necessary for all localities to adhere to the principle of departmental interests being subordinated to overall interests, overall interests taking into account departmental interests and final submission to the overall situation. They should work with one heart and soul, promote work styles, and refrain from looking after the interests of a certain locality or deliberately antagonizing the neighbors. Only in this way will be we able to accomplish our endeavor to satisfactorily harness water resources.

Space Technology Plays Growing Role in Fighting Disasters

*OW2309183391 Beijing XINHUA Domestic Service
in Chinese 1020 GMT 23 Sep 91*

[Report by reporter Chen Zhiqiang (7115 2535 1730)]

[Text] Beijing, 23 Sep (XINHUA)—According to information gathered by reporters from today's opening session of the "International Workshop on the Application of Space Technology in Combating Natural Disasters," China has made significant strides in using space technology to fight natural disasters such as forest fires, floods, earthquakes, marine pollution, plant diseases, and insect pests.

Our country is prone to natural disasters. Apart from spending massive amounts of manpower and materials on building and repairing water conservancy works and on launching tree-planting and afforestation projects, our government has paid much attention to the application of space technology, including remote sensing, satellite communications, and global positioning, in fighting and reducing disasters. As early as the 1970's, our country was running tests on aerial remote sensing surveillance of forest fires. Later, it conducted research on using remote-sensing images generated by weather and ground satellites to monitor the sources of forest fires. An aerial remote-sensing system for monitoring forest fires was gradually established in the country's major forested areas.

For four consecutive years after 1987, our country conducted experiments on the application of remote sensing in flood prevention to alleviate disaster. Remote-sensing images and data on disaster areas in the Yongding He and in the upper and middle reaches of the Huang He and the Chang Jiang Rivers were obtained by aerial synthetic aperture radars, visible light transducers, television cameras, and other equipment. Images were either directly transmitted to the command center or sent back to the ground for processing before they were released for use. An all-weather, quasi-realtime remote-sensing system for monitoring floods was established. During this year's fight against floods and relief operations, the system monitored the flood situations in the Huai He and Tai Hu valleys on three occasions, providing accurate first-hand information to flood control commands.

In environmental protection, our country instituted an aerial marine pollution surveillance system in 1987, using such techniques as airborne surveillance radars, infrared and ultraviolet scanners, and microwave radiometers to monitor man-made pollution and natural disasters such as oil pollution, thermal waste water, and red tides. Such efforts have provided important underpinnings for our country's improvement of the marine environment and its enforcement of maritime laws.

Furthermore, our country has made significant progress in using space technology to breed new strains of farm crops that are resistant to plant diseases and insect pests, to prepare long- and medium-range seismic forecasts, and to monitor landslides, mudrock flows, and other natural disasters.

REGIONAL AFFAIRS

Asia-Pacific Ecology Conference Held in Vladivostok

91WN9694B Moscow SOVETSKAYA ROSSIYA
in Russian 13 Aug 91 First Edition p 2

[TASS REPORT: "The Land of Our Concern"]

[Text] Vladivostok—It is possible to destroy the environment acting in isolation, but the only way to save it is by acting in concert. That was the gist of the presentations by participants in the third conference of university rectors and research institute executives of the Asian-Pacific countries, which has ended in Vladivostok.

"Man has placed an unbearable burden on nature," said Tokyo University president [Tatsuro Matsumae]. "Areas of forest are being reduced, and the oceans and atmosphere are being polluted. Yet our planet is like a vast spaceship, and we will not get any other."

The Japanese professor proposed the establishment of an international system of cooperation that would permit monitoring of the environmental situation.

Supporting T. [Matsumae]'s idea, Academician G. Yelyakov, chairman of the USSR Academy of Sciences' Far Eastern Division, noted that educational measures are just part of the job. The main thing is, by mobilizing all the achievements of world science, to use only environmentally safe technologies.

Conference participants discussed a good many interesting ideas for eliminating the public's environmental illiteracy and raising accountability for crimes against nature. One means of implementing this program might be the internationalization of education. [M. Shervin], professor at Taft University in the United States, told about the prospects for a television space linkup among the countries' universities. The U.S.-Soviet "World Class" project is gaining recognition and support in a number of other countries, including Japan. International television classes and intercontinental discussions among professors and students via telecommunications media have already become a reality. Now the task is to make the costly equipment more accessible to the broad masses.

The participants' presentations and other conference materials will form the basis of a report at a UN conference on environmental protection that will be held next year.

Experts Review Acid Rain Problem in East Asia

OW2509123191 Tokyo KYODO in English 1220 GMT
25 Sep 91

[Text] Kanazawa, September 25 (KYODO)—Some 180 scholars from Japan, South Korea, and China met here Wednesday to discuss ways to combat acid rain and snow in East Asia.

Eiji Hirai, a professor at Kanazawa University who organized the daylong symposium, stressed the importance of cooperation among the three countries to cope with acid rain in the region.

Kim Hui-kang, a South Korean university professor, said despite a decline in sulfur dioxides in the atmosphere of many big cities in South Korea, the density in Seoul is over the government limit.

Japan has taken measures to reduce sulfur and nitrogen compounds, the main causes of acid rain.

Chinese scholars said acid rain has caused serious damage to their country because of the nation's rapid industrialization and a delay in taking countermeasures.

Hirai said the academics will follow up the Kanazawa symposium with a similar event in South Korea in October, and in Chongqing in China's Sichuan Province in the fall of next year to work out measures to prevent air pollution and acid rain.

Japan To Aid China's Environmental Protection Efforts

OW2609061891 Tokyo KYODO in English 0559 GMT
26 Sep 91

[Text] Beijing, September 26 (KYODO)—Japanese business leaders Thursday agreed in principle to cooperate in China's efforts to protect its environment.

The agreement came during a meeting between a visiting delegation of the Japan-China Association on Economy and Trade and Qu Geping, director of China's State Commission on Environmental Protection, delegation members said.

During the talks, Kazuo Haruna, chairman of Marubeni Corp., gave a report on air pollution and other environmental problems that occurred when Japan experienced a period of fast economic growth.

He indicated that Japan would cooperate with Beijing's efforts in a number of ways, including the provision of useful techniques for promoting environmental protection gained from Japan's experience.

The delegation also said it intends to support Beijing's plans through the creation of an organ promoting environmental protection within the association.

The creation of the organ is included in a "Green Aid Plan" that the International Trade and Industry Ministry is considering, which is designed to help developing nations preserve their environment.

Beijing said it would raise the amount of investment for promoting environmental protection to 0.85-1 percent of its gross national product (GNP) in its Eighth Five-Year economic development plan.

This is up from the 0.7 percent of GNP it earmarked in its seventh Five-Year Plan.

HONG KONG

New Antipollution Legislation To Improve Drinking Water

WA0912081091 Hong Kong *THE HONG KONG STANDARD* in English 5 Aug 91 p 3

[Article by Linda Choy]

[Text] The state of Hong Kong's drinking water is set to improve thanks to new legislation being brought in by Guangdong authorities.

The East River, which provides most of Hong Kong's fresh water supply, has been getting progressively more polluted recently.

In late June Graham Barnes, the secretary for Planning, Environment and Lands, was told the water quality was deteriorating although it still passed mainland standards.

Now the Guangdong authorities have stepped in to improve the quality of water from the river by amending water protection legislation, according to the official China News Agency.

The amendment focuses on the antipollution regulations of the river's catchment area, and follows a report of deterioration in the river which provides 70 percent of Hong Kong's fresh water.

With the amendment coming into effect on 1 August, the catchment area of the waterway linking the East River and Shenzhen Reservoir and below 200 metres would be classified the first grade protection zone.

The law stated that, within the protection zone, neither new nor expanded industrial establishments could be built.

As for the existing enterprises, the legislation has prohibited the disposal of sewage into the waterway linking the East River and Shenzhen Reservoir.

Dumping of wasted materials which may threaten the quality of water is also prohibited in the protected zone, the amendment stated.

Within the whole catchment area, industries involving the use and storage of radioactive materials or other polluting industries like electrolysis, dyeing and bleaching, as well as manufacturing of farming pesticides, are not to be constructed.

For the farms within the catchment area, the use of poisonous or unregistered pesticides has been banned.

It has been stressed the municipal government will take up the responsibility to ensure that the water protection policies are carried out.

Monthly Air Pollution Index Inaugurated

WA0912071591 Hong Kong *SOUTH CHINA MORNING POST* in English 13 Aug 91 p 7

[Article by Kathy Griffin]

[Text] Hong Kong's air is still too polluted, despite the fact that Environmental Protection Department [EPD] readings for last month were inside target levels.

Speaking at the launch of the territory's first air pollution index, which will be released monthly, principal environmental protection officer Mr. Raymond Leung said levels of particulates and nitrogen dioxide, persistent and long-term problems, were still too high.

Both can be harmful to health, causing respiratory problems and in some cases cancer.

They come from diesel engines, fuel combustion, construction activities and manufacturing processes.

The index, which represents an average for the previous month, shows that in July the Central and Western area was well within air quality objectives, but that Kwai Chung and, especially, Mongkok registered high levels.

The three stations have been chosen for the monthly index because they represent, respectively: a commercial/residential area; an industrial one; and one at street-level. The EPD has eight other monitoring stations.

Mr. Leung said: "We cannot say [the air quality] is very satisfactory. For sulphur dioxide, they are not very high levels, but for particulates and nitrogen dioxide, we feel that we still have to do something."

The Mongkok station, established in April, is especially affected by diesel pollution because it is the only station in the territory at street level.

Last month total suspended particulates—the black smoke from diesel engines—averaged 98 micrograms per cubic metre.

The plan is to achieve an annual average of no more than 80 micrograms, while no one day should have measurement exceeding 260.

"We do expect higher pollution levels at ground level, but we don't expect everyone will be exposed to this kind of quality in general. For the Mongkok station readings, we're talking about those who spend a lot of time by the road," Mr. Laung said.

If the reading remained high throughout its first year of operation, though, it would be a cause of concern, he said.

The EPD had intended to control diesel pollution by encouraging a switch to costlier petrol, but in June it was told to scrap this policy because of fears it would fuel inflation.

Another danger was posed by respirable suspended particulates, also from diesel fuel and reckoned more dangerous because they stay in the lungs longer. They were recorded at 50 micrograms per cubic metre.

The index has been developed as a result of discussions between the EPD and the Private Sector Committee for the Environment backed by many of Hong Kong's leading companies, which suggested the idea.

INDONESIA

Study Shows Third of Sumatra's Forests Have Disappeared Since 1982

BK1109152891 Hong Kong AFP in English 0824 GMT 11 Sep 91

[Text] Jakarta, Sept 11 (AFP)—U.S. and French satellite photos show that about a third of Sumatra's forests disappeared between 1982 and 1990, and the study of deforestation is likely to spread to other Indonesian islands.

Bertrand Fleutiaux, a consultant to France's National Center for Space Studies, said the "deforestation takes two forms—a hodge-podge of clearings and undergrowth and a total disappearance of the trees."

The expert, here to take part in a seminar on information gathered by the Spot remote sensing satellite cameras on behalf of Southeast Asian countries, did not say how many hectares had been cleared on Indonesia's largest island.

But he did say that judging from a comparison of pictures taken since the early 1980's by the U.S. NOAA [National Oceanic and Atmospheric Administration] satellite and then by Spot, "about 30 percent of the forests of Sumatra have disappeared."

"It is going to spread to other Indonesian islands in the years to come," Fleutiaux said of the study of deforestation.

The shrinking of the vast, primeval tropical jungles of Southeast Asia has taken on dramatic proportions under the double pressure of industrial growth and a growing population.

The disappearance of the region's huge tropical forests has caused soil sterility and droughts locally. Globally, with the huge forests of Indonesia, Brazil, and Equatorial Africa serving as the green lungs of the planet, their cutting down is thought by scientists to be causing serious climatic problems.

Spot has been selling pictures of the spread of deforestation to Indonesian firms for five years and to the government's Forestry Ministry for the past two years, said Pierre Engel of Spot Image, the firm responsible for selling the satellite's findings.

As well, a joint project 75-percent financed by France and involving six Southeast Asian countries is compiling a systematic inventory of the region's deforestation problem.

Indonesia also uses information from the remote sensing satellites to help organize the migration of people on overcrowded Java Island, to plan irrigation works and develop urban areas, to search for mineral, oil and gas reserves, and to monitor volcanic activity.

About 20 Indonesian specialists took part in the annual week-long seminar here, which ended Tuesday and was in part sponsored by the French space center.

JAPAN

New Means Sought To Raise Funds for Environmental Aid to Developing Countries

OW2109101291 Tokyo KYODO in English 0941 GMT 21 Sep 91

[Text] Tokyo, September 21 (KYODO)—Former Prime Minister Noboru Takeshita is considering proposing a tax on cigarettes among ideas to raise funds for environmental assistance to developing countries, government sources said Saturday.

Takeshita, who will host an international conference in Tokyo next April to discuss the matter, is also considering raising postal charges and issuing memorial stamps and lotteries to raise funds for the cause, the sources said.

A special adviser to the United Nations Conference on the Environment and Development (UNCED), Takeshita has earlier said he will sponsor a three-day meeting in Tokyo drawing some 20 influential people from around the world in a bid to ensure the success of the U.N.-sponsored "Earth Summit" in Brazil in June.

According to the sources, developing countries will require 60 billion dollars in assistance annually for environmental preservation from June 1992.

By the year 2000, they will require 140 billion dollars annually, taking into account an explosive population increase.

If developing countries are not ensured of this assistance, it is believed hardly likely they will sign a treaty to prevent global warming.

Takeshita's aim is for Japan to take the initiative in covering 20 percent or 12 billion dollars out of the 60 billion dollars and urge other industrialized nations for donations, the sources said.

They said Takeshita has been studying ways to raise the funds with the ruling Liberal Democratic Party (LDP).

The LDP is relatively optimistic about imposing a tax on cigarettes because their price in Japan is cheaper than in other countries, the sources said.

Some 300 billion cigarettes are sold in Japan annually. A tax of 1 yen on each cigarette would provide an income of 300 billion yen (about 2.2 billion dollars) a year.

Raising postal charges would also be a good source for funds because the number of cards and letters delivered nationwide amounts to 28 billion yen (about 200 million dollars) annually, the sources said.

According to the Earth Summit Secretariat, more than 30 nations and 100 civil groups have already proposed the issue of stamps toward environmental aid.

Takeshita and the LDP are also considering urging a large contribution from private enterprises.

The Secretariat has proposed assuming developing countries' debts in exchange for preservation of nature (debt-for-nature swap), or to distribute International Monetary Fund (IMF)'s special drawing rights to them.

It has also proposed the buying and selling of carbon dioxide emission rights among industrialized nations.

The Earth Summit will be held June 1 to 12, 1992 in Rio de Janeiro, and expected to draw some 20,000 people, including top government officials and civil group representatives from most nations.

Among those slated to attend the April conference in Tokyo are former British Prime Minister Margaret Thatcher, former World Bank Presidents Robert McNamara and Barber Conable, and former Mexican President Miguel de la Madrid Hurtado.

Company To Export Non-CFC Car Air-Conditioner Parts

OW2609081891 Tokyo KYODO in English 0732 GMT 26 Sep 91

[Text] Tokyo, September 26 KYODO—Sanden Corp. announced plans Thursday to export car air-conditioner compressors using substitute materials for ozone-depleting chlorofluorocarbons (CFC's) as refrigerants.

Experts say the substitutes do not deplete the ozone layer as CFC's do.

Sanden, a top car air-conditioner maker, will ship tens of thousands of the compressors before the end of the year to four European carmakers—Fiat of Italy, Renault of France, and Volvo and Saab-Scania, both of Sweden, the officials said.

The European carmakers have been asking Sanden to sell them compressors based on CFC substitutes to comply with the Montreal Protocol, which calls for global elimination of CFCs by 2000.

Sanden also plans to start exporting the new compressors next year to U.S. automakers and is making preparations to produce one million of them a year, the officials said.

The company will not sell the compressors, however, to Japanese carmakers, which have agreed not to use the CFC substitutes until it is scientifically proved that they do not affect the ozone layer, the officials said.

SOUTH KOREA

Government To Conduct Environmental Research in Two Cities

SK1409031291 Seoul THE KOREA TIMES in English 14 Sep 91 p 3

[Text] The government will designate two medium-sized cities as model cities where comprehensive research on pollution prevention and environmental preservation will be conducted for the next five years.

The Science and Technology and Environment Ministries agreed to select two cities from nine candidate cities this year.

One of them will be a seriously polluted city and the other will be an environmentally well-preserved city, officials said.

A total of 21.1 billion won will be invested in the model city project until 1996, they added.

The ministries will use the funds to improve the damaged environment in one city and preserve the sound environment in the other.

The candidate cities are Yongin, Yangpyong, Songnam, Migum and Anyang in Kyonggi-to, Chunchon in Kangwon-to, Chonju in Chollapuk-to, Pohang in Kyongsangpuk-to and Ulsan in Kyongsangnam-to.

Yongin, Yangpyong and Songnam are viewed as cities where environmental problems might arise in the future, Chunchon and Chonju as environmentally well-preserved cities, Migum as a city composed of old and new districts and Pohang, Ulsan and Anyang as seriously polluted cities.

Through the model city project, the government will acquire knowledge and experience in fighting pollution.

The information acquired from the project will be used to preserve and improve the environment in other cities across the nation.

An Environment Ministry official said that the model cities will have to be subject to minimal influences environmentally from nearby cities.

He also hinted that other medium-sized cities which were not included in the present candidate city list might be selected as model cities.

The government will launch basic environmental research in the model cities with \$440,000 which will be provided from the United Nations Development Program [UNDP].

The Seoul-based UNDP office promised to financially assist the model city project last July, the official said.

On the basis of the research results, the government will build sewage and garbage treatment facilities which can conduct 100 percent sanitary disposal.

An automatic air pollution monitoring system will also be introduced in the model cities.

For effective implementation of the model city project, the government will form two task forces comprising government officials, local officials, scholars and representatives of residents.

State-Run Company Accused of Ignoring Environmental Damage

SK1909035191 Seoul THE KOREA TIMES in English 19 Sep 91 p 8

[Text] The Korea Water Resources Corp. (KWRC) has done little to hold environment damages in check while carrying out a variety of development projects.

In some cases, the state-run company has failed to undergo environment impact assessments, which are deemed obligatory in implementing development projects.

This was revealed in a report submitted to the National Assembly by the corporation yesterday.

The corporation, while pushing for the development of an industrial complex in Sihung, Kyonggi-to, had promised to secure its own disposal sites of industrial wastes during its policy negotiations with the Environment Ministry but did not put it into practice in the course of development procedures.

While the complex is set to enter into full-scale operation next December, a sewage disposal plant for the complex will likely be completed in November 1993 belatedly, according to the report.

Officials said the delay of the plant construction will cause serious environmental contamination of nearby shores.

The state-run company also neglected its duty of making periodic examinations of water pollution in the collection sites of sand and pebbles, raising concerns over the management of tap water, it said.

The report revealed that KWRC also failed to receive an environment impact assessment while carrying out its development project of Ansan, some 40 kilometers southwest of Seoul.

Chemical Company Managers Arrested for 'Environmental Crimes'

SK2409030091 Seoul THE KOREA TIMES in English 24 Sep 91 p 3

[Text] Chonju—The district prosecutor's office here yesterday arrested four officials of the Oriental Chemical Industry's TDI (toluene diisocyanate) factory in Kunsan, Chollapuk-to on charges of committing environmental crimes.

The four are plant manager Son Sok-won, 52, Kim Sang-yun, 42, Yu In-pae, 40, and Yi Yong-sok, 28, all in charge of production. Four others were booked on similar charges but released without physical detention.

Oriental Chemical was found to have leaked the poisonous TDA (toluene diamine) into nearby farmland, causing extensive damage to crops and endangering the lives of farmers.

Investigations by the Environment Ministry and the Korea Advanced Institute for Science and Technology (KAIST) revealed last week that the discharge was the result of improper management and operation of the production and treatment facilities.

The facility resumed production under special surveillance by the Environment Ministry although farmers have been demanding that it close down permanently.

LAOS

Decree on Cessation of Timber Exploitation

BK1709093791 Vientiane Vitthayou Hengsat Radio Network in Lao 0000 GMT 17 Sep 91

[Decree issued by Prime Minister Khamtai Siphandon of the Lao People's Democratic Republic on cessation of timber exploitation nationwide—read by announcer]

[Text] On 26 August Khamtai Siphandon, prime minister of the Lao People's Democratic Republic, issued a nine-article decree on the cessation of timber exploitation.

The decree read: The party's and state's plans, policies, resolutions, decrees, and orders governing forestry work, in particular the resolution adopted by the First Nationwide Conference on Forestry Work in 1989, have so far been implemented with success to a certain extent. Attaching significance to the forestry work and the defense and conservation of the environment, many localities have encouraged farmers to give up slash-and-burn cultivation and have launched land allocation schemes to provide land for the people. However, several mistakes and shortcomings do exist in the sphere of forestry work. For instance, the forestry and other sectors concerned, including local administration, have failed to effectively fulfill their duties. Anarchic practices are involved in the process of issuing permits for timber exploitation, wood processing, and trade, and in granting

forest concessions while the law and regulations concerned are neglected. Many companies and enterprises have been exploiting and processing timber indiscriminately in various ways. Worse still, wood poaching and counterfeiting of official documents and bribery of cadres and people are rampant in logging business circles. These shortcomings and mistakes have increasingly destroyed the country's forestry resources and environment. In order to correct the abovementioned shortcomings and mistakes, and based on a resolution adopted by the government during a meeting on 23 August 1991, the prime minister issued the following decree:

Article 1. Timber exploitation is to be halted nationwide.

Article 2. It is hereby instructed that surveys and inspections of forested areas and measures dealing with the protection of forested areas and the control of timber exploitation and trade be worked out to bring the logging business fully under control of the country's laws and regulations.

Article 3. Logging business sectors, factories which use wood as their source of energy, saw mills, and wood processing factories which have not been established in line with the Council of Ministers Decree No. 117/PSL dated 5 October 1989 and the regulations of agencies concerned must be closed immediately.

Article 4. The operation of state-owned wood processing business enterprises and logging companies, including those set up with foreign cooperation, will be reviewed and their problems will be reported to the government for further consideration.

Article 5. Forest survey work must be expeditiously carried out. Forested areas must be classified as protected forests, forest reserves, and reafforested areas in a bid to revitalize forested areas or turn them into economic forests or production forests. The Ministry of Agriculture and Forestry is instructed to work out specific rules and regulations in this regard.

Article 6. Plans, policies, resolutions, decrees, and orders in connection with forestry work must be popularized through the use of all mass media vehicles and all forms of propaganda among cadres, soldiers, police, and people so that they will be implemented faithfully.

Article 7. The Ministry of Agriculture and Forestry is assigned to coordinate with all agencies concerned to ensure effective implementation of this decree. The ministry must educate the people about this decree, laws, regulations, and economic conditions concerned, so as to gain their full cooperation with a sense of self-mastery.

Article 8. Ministers, heads of organizations of equal status, and governors of provinces and municipalities nationwide are responsible for the strict implementation of this decree.

Article 9. This decree comes into effect from the day it is signed: that is 26 August 1991.

NEW ZEALAND

Global Warming Threatens Existence of Tokelau Atolls

BK2409062091 Melbourne Radio Australia in English
0500 GMT 24 Sep 91

[Text] There has been a warning that everyone in the Pacific territory of Tokelau may eventually have to be evacuated because of increases in the earth's temperature. The Pacific News Agency, PAC NEWS, says the warning is contained in a report written by two Australian consultants for next year's United Nations Conference on Environment and Development.

The consultants, (Stella Humphreys) and (David Collins), say the so-called greenhouse effect may eventually render Tokelau's three atolls uninhabitable. Scientists define the greenhouse effect as global warming caused by pollution of the atmosphere leading in turn to higher sea levels.

The consultants say if their worst fears are realized, Tokelau may cease to exist.

Commenting on the report, Tokelau's director of agriculture and fisheries, (Fua Taloa), said the next cyclone to hit the territory might force a decision on whether evacuation was necessary.

Tokelau, which lies north of Western Samoa, is administered by New Zealand and has a population of about 1,700.

Adherence to UN Driftnetting Resolutions Urged

BK3009072491 Melbourne Radio Australia in English
0500 GMT 30 Sep 91

[Text] New Zealand has urged all countries to observe United Nations resolutions calling for an end to driftnet fishing in the South Pacific. The appeal is contained in a report on the issues submitted by New Zealand to the UN secretary general.

The foreign minister, Don McKinnon, said the report would be included in a global report on driftnetting when debate on the issue by the UN General Assembly begins later this year.

The practice involving use of long nylon nets is regarded by opponents as a serious threat to the marine environment.

Mr. McKinnon said if driftnets were not abolished, future generations would be (the losers), especially in the South Pacific countries.

TAIWAN

Kuomintang Chairman Li Teng-hui on Nuclear Power Plant Project

OW1409040791 Taipei China Broadcasting Corporation News Network in Mandarin 2300 GMT 11 Sep 91

[Text] With regard to the fourth nuclear power plant project, an issue of deep concern among the people, Mr. Li Teng-hui, chairman of the Kuomintang, pointed out at the Central Standing Committee meeting on 11 September that the planning and development of electric power sources has a great impact on the people's daily life and the nation's economic development. He urged those in charge of the administrative departments concerned to make a careful study of the project, set up feasible measures, and strengthen propaganda and communications so as to win support from the public.

Meanwhile, (Chang Ssu-min), general manager of the Taiwan Power Company, said on 11 September: The Taiwan Power Company has a plan to reward the people of Kungliao where the fourth nuclear power plant is to be constructed. It will provide the Kungliao people with an amount equivalent to one percent of the total cost of this project to be used for the construction of a new residential area and a school.

Since the total budget for the fourth nuclear power plant proposed by the Taiwan Power Company is 169.7 billion New Taiwan Dollars [NT\$], the amount of the reward funds, namely, one percent of the cost of the project, will be as high as NT\$1.7 billion, the highest reward amount ever given by the government to the local people.

Chiang Ping-kun, vice economics minister and spokesman for the Ministry of Economic Affairs, said on 11 September: In 10 years, electric power consumption in our country will double. Moreover, electric power cannot be imported. In view of this, there is no other choice but to build a new nuclear power plant.

A report on the assessment of the environmental effects of the fourth nuclear power plant project—a matter of public concern—has been worked out by the Atomic Energy Council of the Executive Yuan after summing up the opinions of all sectors. The report, which is being printed, is expected to be published in the next few days. (Yang I-ching), director of the Radiation Protection Department of the Atomic Energy Council, who is responsible for summing up the opinions, said that the more-than-50-page report contains both positive and negative opinions given by members of the four investigative committees. However, he added, the report contains no conclusion as to whether the fourth nuclear power plant should be built or not.

In the meantime, Economics Minister Hsiao Wan-chang pointed out at the Central Standing Committee meeting that the fourth nuclear power plant must be built. The

Taiwan Power Company also announced publicly that a public opinion poll shows that 30 percent of the villagers in Kungliao are in favor of building the fourth nuclear power plant. However, public figures in Kungliao and antinuclear activists are suspicious of the accuracy of the poll result. They said that they would mobilize the village people to cast votes of no-confidence at the election at the end of this year and would discuss the next protest action on 23 September.

THAILAND

Environment Board Chief Argues for Greater Funding

92WN0008A Bangkok BANGKOK POST in English 3 Sep 91 p 6

[Text] The environment fund should be expanded to cope effectively with the country's pollution problems, National Environmental Board (NEB) secretary-general Athon Suppapodok said yesterday.

The 500-million-baht budget which the Cabinet agreed could start the fund for fiscal year 1992 is too small to solve the problems, he said.

"The amount is sufficient for only a few projects," he said, adding the government's plan to seek foreign aid is expected to be hard to fulfil and the method is outdated.

Low-interest loans should be raised to finance antipollution projects, he said. The fund, which will draw its revenue on a "polluter pays" basis, should assist small- and medium-scale industries in developing their own pollution treatment facilities through the loans.

Factory owners in identical industries should be encouraged through the Industry Ministry to regroup or relocate in the same area to share waste treatment facilities.

"They can do what they think necessary using proper technology," Mr. Athon said.

The government has detailed the pollution fees and target industries in the revised national environmental quality conservation and promotion law. Fees will be charged for garbage collection, waste water treatment and flood prevention.

The revised law is to apply nationwide but local authorities, such as Bangkok Metropolitan Administration, will be allowed to introduce their own regulations to collect treatment fees, he said.

The NEB, meanwhile, will have to adjust its role to be more active in overseeing pollution problems and in providing equipment to other agencies monitoring and controlling the problems.

Industrial projects normally have to undergo environmental impact assessment before being approved by the

NEB. However, the duty of monitoring the environmental impact now belongs to the Industrial Works Department.

Under the revised law to be forwarded to the Cabinet for approval, the NEB will take up the monitoring task, entailing the upgrading of its manpower and equipment, Mr. Athon said.

The NEB until now has been responsible for policy matters and drawing up measures to tackle environmental problems but has had no role in providing other material help to government agencies in charge of monitoring and controlling the problems.

These agencies need financial support to carry out their task effectively and efficiently, he said, adding the NEB is authorized to approve private projects but has had no say in government-initiated schemes except to carry out studies on their possible environmental impact.

Protestors Call on World Bank To Deny Loan for Pak Mun Dam

*BK1209120991 Bangkok THE NATION in English
12 Sep 91 p A2*

[Text] The government would be able to secure a loan from a financial source other than the World Bank to fund the construction of the Pak Mun dam if the bank would decide against funding the project, PM's [Prime Minister's] Office Minister Phaichit Uathawikun said yesterday.

The minister's statement came after the World Bank's head office in Washington postponed its decision on the Electricity Generating Authority of Thailand's (EGAT) request for a Bt1.35-billion loan to fund about one-third of the implementation cost of the hydroelectric project.

The government, he said, is ready to take into consideration all parties' opinions about the pros and cons of the project.

Phaichit said the Pak Mun project covers the construction of a dyke to tap a river flow, not a big reservoir, and it should not have an impact on the local ecological system.

In a related development yesterday, opponents of the Pak Mun dam submitted a protest letter to the government calling on it to scrap the controversial dam project in Ubon Ratchathani Province.

About 30 representatives of student activist groups, environmentalists and villagers who will be affected by the dam construction went to Government House and handed to officials there the protest letter addressed to Prime Minister Anan Panyarachun.

The opponents also wanted the World Bank to decide against funding the project, which they said will displace thousands of villagers around the dam site and cause serious environmental damage in the long run.

Leader of the group, Thiang Banthao, criticized the government for having taken into consideration only the EGAT's information about the pros and cons of the hydroelectric dam.

"The government is apparently insincere about helping to alleviate the plight of those who will be affected by the dam construction," he said.

Thiang said the Ubon Ratchathani villagers wanted the World Bank representatives to meet them at the dam site before Oct 14 and give them an answer on whether the bank will accept their demand to reject the funding for the planned dam.

The visit to Government House followed the end of the protest rally by about 150 dam opponents outside the World Bank's Bangkok office at the Olympia building in Silom area earlier yesterday.

The protest was called off after a report said that the World Bank's head office in Washington has postponed its decision on the funding for the Pak Mun project.

Japan Grants Aid for Green Belt in Northeast

*BK1909081391 Bangkok Radio Thailand Network
in English 0000 GMT 19 Sep 91*

[Text] Japan offers a grant aid to Thailand aimed at turning the northeast into a green belt area.

Thailand will receive a Japanese grant aid of 1,580 billion yen, or 290 million baht, for use in the establishment of four large plant propagation centers in northeastern Thailand.

The exchange of notes for the grant aid will take place this morning at 10:00 a.m. at the Embassy of Japan in Bangkok.

Representing Thailand at the ceremony will be Director General of the Department of Technical and Economic Cooperation Wanchai Sirirat, while the Japanese side will be represented by Japanese Ambassador to Thailand Mr. Hisakiko Okazaki.

The four plant propagation centers will serve as venues to produce and distribute seedlings and saplings of good quality for demonstration at model community forests. They expect that the setting up of the centers will help support the Thai Government's reforestation programs in northeastern provinces.

Moreover, the project will also contribute to the mitigation of natural disasters and the improvement in the quality of life of the local people in the northeast.

Committee Rejects Proposal To Re-Export Teak Logs

BK2709024591 Bangkok *THE NATION* in English
27 Sep 91 p A4

[Text] The Economic Policy Screening Committee has rejected the National Security Council's (NSC) call for the government to allow the re-export of teak logs and timber imported from neighbouring countries, saying that it would run against the global rain forest conservation initiative.

A well-informed source in the committee said the call was not entertained because the economic ministers shared the view that the import of logs and timber should be for local use only.

Moreover, the re-export of timber and logs from Thailand would encourage cash-strapped neighbors to accelerate the cutting of their forests in exchange for hard currencies, said the source.

He added that the massive deforestation in the region would be devastating to the whole region and undermine the international community's attempt to conserve the remaining rain forests in Southeast Asia.

Agriculture Minister Nat Aphaphirom meanwhile said that the proposal will be resubmitted to the Cabinet for consideration.

The NSC's call for the Cabinet to extend licenses for four sawmills to continue to operate bonded warehouses where imported logs and timber can be stored tax-free until they are released for processing and sales was also dropped, according to the source.

The licenses have to be renewed every three years. They will expire at the end of the month, said the source.

According to a report compiled by the security body, since the government banned logging nationwide at the beginning of 1989, the demand for imported logs and timber has increased markedly.

Four companies, Santi Forestry Company, Thai Pong Sawmill Company, TCK Sawmill Company, and Hong Heng Lee Sawmill Company, which have been approved to operate bonded warehouses since 1984, have helped alleviate the shortage of wood in the country, the report said.

The security council suggested that the Commerce Ministry amend its regulation which governs the re-export of teak logs and timber and that the Customs Department extend the validity of the four licenses.

Before the proposal was to be deliberated by the economic ministers last Wednesday, the ministers had assigned the Commerce, Industry and Foreign Ministries to scrutinize and comment on the proposal, said the source.

He said the three ministries agreed that the import of logs and timber has increased sharply since Thailand closed its forests. At the same time, Thailand exports only six per cent of imported wood in the form of teak furniture annually. Last year, the import of teak logs and timber was worth over Bt [baht] 10 billion while exports amounted to only 15,021 cubic meters worth Bt430 million.

The ministries were concerned that the massive import of wood from neighboring countries would be used as grounds against the government for secretly undermining environmental and conservation movements, the source said.

Moreover, nongovernmental organizations in the United States and the European Community have stepped up their campaigns against the import of wood products originating from tropical rainforests, according to the source.

VIETNAM

Destruction of Bird Refuges, Mangrove Swamps in Minh Hai Decried

91WN0693A Ho Chi Minh City SAIGON GIAI
PHONG in Vietnamese 18 Jul 91 p 2

[Article by Le Van Xiem]

[Text] In very few places is nature as kind to man as it is in Minh Hai. It can be said that here, with just a little industry and knowledge, a person can quickly become rich. The "wealth given by heaven" lies all around, supplying people from the moment they are born until they die. The arable land is very fertile, a great gift of silt from the Mekong River. The U Minh Ha forest runs for hundreds of kilometers, containing huge amounts of timber and large numbers of fish and birds. The Minh Hai coastal area is the point of convergence for Eastern Sea shrimp and fish. However, in recent years, nature in Minh Hai has declined rapidly. This is because nature here has been exploited in a disorderly and destructive way without thought for the consequences.

Bird Refuges Have Been Destroyed

About 7 km east of the city of Bac Lieu, there is a large bird refuge. According to what elderly people have said, in the past, this refuge had tens of thousands of birds, mainly cranes and egrets.

I eagerly went to the bird refuge in the hope of seeing and taking some pictures of birds returning to their nests. But I was disappointed. Guarding the bird refuge were several public security men. One said to me:

"This is called a bird refuge, but there aren't any birds left. People have eaten all of them."

He added that prior to liberation, the refuge was looked after and guarded very well by private individuals. But

after liberation, the refuge was collectivized and turned over to the collective to manage. That is when the destruction began. Almost every day, hundreds of young birds were caught. Prosperous visitors from various places came here and wanted to try roast bird. These innocent birds became "presents," "sacrificial offerings," and bribes to "express thanks." One visitor from the center caught several hundred birds to take them back home so that his family could taste such delicacies. But by the time he got back to the city, the birds had all died in the car. Bad elements have taken the opportunity to steal birds. Sometimes, they have caught several bags of birds.

The locality has changed the owner of the refuge several times. It has turned it over to the district and tourist authority to manage. But this has not stopped birds from ending up on the dining table or in stores. By the time the bird refugee was turned over to the Bac Lieu public security forces to manage, it was too late. There were no birds left to return to their nests.

The fate of the Bac Lieu bird refuge is the same as that of the refuges in U Minh Ha, Dam Doi, and Ngoc Hien. The question is, why haven't the localities implemented policies and regulations to protect the bird refuges?

Forests Destroyed

During the past several years, shrimp rearing has expanded in Minh Hai, and this has increased output and increased revenues for the provincial budget. However, because things have been done in a spontaneous way, tens of thousands of hectares of mangrove swamps have been destroyed. I don't know who said that "shrimp support mangrove trees." The fact is, "shrimp swallow the mangrove trees." To raise shrimp, the first step is to clean the environment by eliminating all types of plants in order to have a flat surface. Because if there are still plants there and the leaves fall into the canals and dirty the water, the shrimp will die or fail to grow.

Along the way from the Dat Mui 5 Canal to Kinh Hoi and Tieu Dua, we saw many mangrove trees that had been cut down. Mangrove trees 10-15 meters tall had been cut down and were waiting to be turned into charcoal. The situation was the same in remote forest areas of Dac Lac. The new economic people or refugees had cut down the trees in order to use the land as upland fields.

Whenever a shrimp farm is built, it means that that much forest area has been destroyed. Many poor families survive by making charcoal from mangrove trees. Type 1 charcoal must be produced from logs having a diameter of 30 cm or more (mangrove trees over 25 years old). The small number of forest rangers and troops cannot control the huge forest area. They have been attacked and threatened by those who make charcoal.

Little attention is given to afforestation work in Minh Hai. With the present rate of forest destruction, how much longer will the mangrove forests survive?

The Sea Is Rapidly Declining

The Mekong River, which runs from the north into the ocean off Minh Hai, carries various matter that provides an inexhaustible source of food for the shrimp and fish in the Eastern Sea. For this reason the coastal area of Minh Hai has become one of the main fishing grounds for both domestic and foreign fishing boats.

From Ganh Hao in eastern Minh Hai to Song Doc in western Minh Hai, we saw thousands of fishing boats from almost every province in the country. With the exception of a few boats that had fishing contracts with the Minh Hai Marine Products Sector, few of the boats had contracts to fish in these waters. The vast sea here has become very congested. Boats from Kien Giang, Hau Giang, and other provinces freely fish in Minh Hai's waters. The boats that fish here illegally usually sell their catch to foreign boats.

This disorder has led to violations of the law. The state has prohibited fishing using high-pressure lamps, but illegal activities are regularly carried on at night. This lamp light attracts small shrimp and fish. They can't escape and swim around the light until they are exhausted. In the morning, in the areas where the people fish using high-pressure lamps, dead shrimp and fish float atop the water.

Thai boats come and fish here illegally. They use seine nets to drag areas five-10 km, nets that have been outlawed by many countries, including Vietnam. This type of net exterminates marine life in a large area. Thai ships select the best fish and shrimp of export standard and throw the rest back into the sea. This causes pollution and frightens the shrimp and fish.

Marine life off the coast of Minh Hai is becoming scarce. A fisherman from Song Doc said that in the past, large shrimp (10-13 shrimp per kg) and lobster (0.3-0.5 kg each) were prevalent off the coast of Minh Hai. But now, they are seen only occasionally. No longer are large schools of fish seen. It is becoming more and more difficult for fishermen to make a living.

I asked myself, If this continues, will there be any marine life left in the sea for our grandchildren?

On the Ca Mau peninsula, there are presently several thousand hectares of marshland that have been banked with earth. Many people and a number of mass organizations are waging a fierce struggle for this land. They are digging up the land to prepare shrimp farms. Here, after water is released into the ponds, sea shrimp are raised in large numbers. This wrangling for sources of profits here must be overcome quickly.

A Few Minor Proposals

In order to save the natural environment in Minh Hai before it is too late, discipline must be restored, and the

laws and control measures must be strengthened. Those who encroach on the environment, such as by killing birds, cutting down mangrove trees, catching fish using high-pressure lamps and explosives, and so on must be severely punished. The bird refuges should be turned over to private individuals to manage using contract forms. People must be helped to expand their shrimp farms in the surplus and empty coastal areas. Cutting down trees to obtain land to raise shrimp must be avoided. The time has come to include the shrimp rearing activities of the families in the plans of the province. The spontaneous situation that now exists should not be allowed to continue. The forest areas that have been destroyed should be reforested immediately. A long-term measure is to educate the people so that they understand that protecting the environment will benefit each person, each family, and all of society.

Japanese Firms Launch Wood Processing Venture
*BK2409154191 Hong Kong AFP in English 1119 GMT
24 Sep 91*

[Text] Hanoi, Sept 24 (AFP)—Two Japanese companies are launching a one billion dollar [as received] joint venture with a Vietnamese firm to process and export wood products from southern Vietnam, the VIETNAM ECONOMIC NEWS reported Tuesday.

The Japanese firms, Kolke and Musumi, will contribute 55 percent of the prescribed capital for the 10-year venture, called the KPM Wood Processing Joint Venture Company for Export, the semi-weekly Trade Ministry newsletter said.

The Vietnamese partner is the Union of Export and Production Enterprises in Song Be province, which begins just north of Ho Chi Minh City and runs to the Cambodian border.

REGIONAL AFFAIRS

Romanian, Bulgarian Prime Ministers To Cooperate on Ruse-Giurgiu Pollution Problems

AU1209112791 Sofia Khorizont Radio Network
in Bulgarian 0900 GMT 12 Sep 91

[Maya Boneva report on statements by Romanian Prime Minister Petre Roman and Bulgarian Prime Minister Dimitur Popov on 12 Sep; place not given—recorded]

[Text] [Announcer] The official visit of Romania's prime minister, Petre Roman, to our country began today. Despite the fact that the visit is scheduled to be a brief one, we are looking forward to it with great expectations and with special attention.

Our reporter Maya Boneva is covering the visit. What is the news?

[Boneva] There is only one news item and I think it is very important. Only a few minutes after their meeting the two prime ministers, Petre Roman and Dimitur Popov, declared their intention to become personal guarantors for the ecological problems in the Ruse-Giurgiu area. At this point I begin my report:

The opening of the Romanian-Bulgarian dialogue proceeded in an unusual manner. Immediately after their arrival at the official residence for the talks, the two prime ministers expressed their wish to make statements, which were addressed mainly to the citizens of Ruse, and to the Romanian and Bulgarian public, of course. You can hear part of the statements:

[Begin Roman recording in Romanian, fading into Bulgarian translation] Stepping onto Bulgarian territory, and only a few minutes after the beginning of our talks, we feel obliged to state that the main topic on the agenda is the Ruse-Giurgiu problem. Being aware of my responsibility as prime minister, but also as a human being, I would like to say that even prior to the revolution our lives and work were connected with environmental protection. For this reason, this problem is particularly important to me. I would also like to tell the citizens of Ruse, in particular, that we have never treated the ecological problems there lightly. As far as we are concerned, Romania and Bulgaria have both inherited a critical state of pollution from the totalitarian past. It is a situation for which we are not personally responsible, but for which we have to find a solution. In my opinion we should not fight each other, but work together. I repeat that, according to a joint decision that I and my Bulgarian colleague, Prime Minister Dimitur Popov, reached together a few minutes ago, each of us should deal personally with this problem in the near future.

In the sphere of our mutual relations as a whole we are moving toward a more up to date cooperation based on the realistic observance of our two countries' interests. One of these interests concerns the life of the citizens of Ruse in particular. [end recording]

This was what Prime Minister Petre Roman had to say. Now we turn to Prime Minister Dimitur Popov's statement:

[Begin Popov recording in Bulgarian, few words indistinct because of superimposed Romanian translation].

[Boneva] I will continue with a summary, because of the bad recording, which is marred by the necessary simultaneous translation into Romanian. Mr. Popov stated as follows: I agree with Petre Roman that we are obliged to proceed with this work. This is our response to the requests of the Ruse and Giurgiu citizens. This response, which we should call prompt, rather than spontaneous, to the two cities' claims represents an opening to our talks and to all forthcoming decisions that we intend to adopt. I know Mr. Petre Roman and I can assure you that we will both accomplish our duties. He acknowledged with full understanding the complexity of the subject. Therefore, we just decided together, in realizing our responsibilities as the prime ministers of the two countries, that the first question to be discussed and decided upon should be the Ruse-Giurgiu issue, Mr. Dimitur Popov pointed out.

What is the important issue in this respect? In my opinion, the two countries' prime ministers are assuming the obligation of observing and promoting the activities of the two governments and of the joint commissions composed of representatives from Bulgaria and Romania which are in charge of resolving this complicated problem.

We are obliged to do so, Prime Minister Popov said, and I am convinced this is a firm commitment in connection with our response to the requests of the Ruse citizens submitted to us. [End recording]

Bulgaria Threatens To Recall Bucharest Ambassador Over Ruse Pollution

AU3009155891 Sofia BTA in English 1406 GMT
30 Sep 91

[Text] Sofia, September 30 (BTA)—The Danubian city of Ruse was polluted again early this morning despite the diplomatic activity of the Bulgarian Government last week, when the Giurgiu-based chemical works polluted the atmosphere several times.

Bulgaria's Prime Minister Dimitur Popov is in Ruse today, as he promised last night. He said he would visit Giurgiu as well to meet with his counterpart Petre Roman or with Romania's minister of the environment. Yesterday Mr. Popov made two statements on Ruse's problems on national radio and television. He spoke about his unsuccessful efforts to contact Mr. Petre Roman last week and to demand categorically that Ruse no longer be gassed. At their recent meeting in Sofia the two prime ministers pledged themselves to become guarantors of the settlement of the problem.

On September 28, President Zhelyu Zhelev's spokesman stressed Dr. Zhelev's repeated statements before Romania's president and other leaders that such an isolated but pressing problem should not be allowed to cast a blight upon Bulgarian-Romanian relations as a whole. Unless Romania urgently takes actions to end the environmental tragedy in this Bulgarian city, Bulgaria will consider seriously recalling its ambassador from Bucharest, the president's spokesman said. The spokesman pointed to the continued chlorine pollution of Ruse as one of the reasons for postponing Mr. Ion Iliescu's visit to Sofia.

Meanwhile, a special declaration of the Romanian Ministry of Foreign Affairs denied blame that the Giurgiu-based chemical works have anything to do with the environmental tragedy in Ruse.

A sign-in campaign in support of Ruse's citizens was launched in Sofia. Demonstrations and protest actions are held frequently in Ruse. Recently the fourth anniversary of the first official protest was marked.

Ecoglasnost Calls for International Support of Black Sea Pollution Control

*AU2809140591 Sofia BTA in English 2323 GMT
27 Sep 91*

[Text] Sofia, September 27 (BTA)—The Ecoglasnost Independent Movement called on the Bulgarian president to issue an appeal to the heads of all Black Sea and Danube countries, to all international institutions concerned, and to the Bulgarian and the world community to support the idea of declaring 1992 the year of Black Sea Pollution Control. The appeal will facilitate the signing of the long-delayed international convention on the Black Sea and the working out of projects with the participation of prominent European scientists. It will help attract the attention of Bulgarian and foreign banks, it will help amend related legislation, and finally, it will help preserve the Black Sea for the next generations, it is said in an appeal sent to President Zhelev. The document was submitted for circulation to the press center of the Union of Democratic Forces (UDF) today.

International Black Sea Ecology Project To Be Developed

*AU0110085091 Sofia BTA in English 0743 GMT
1 Oct 91*

[Text] Varna, October 1 (BTA)—An international working meeting of scientists from the Black Sea countries and the Wood's Hole Oceanography Institute started here yesterday. The participants will work out a 10-year international project on the Black Sea's environmental problems.

The meeting heard an address sent by Bulgaria's President Zhelyu Zhelev. All countries polluting the Black Sea to a smaller or greater degree have the moral duty and the obligation to take urgent steps towards saving it,

according to Dr. Zhelev. "We are convinced that Europe will help us save the Black Sea and that other continents and international organizations and institutions will support us," the address says.

Bulgaria is ready to sign in the near future an international convention against the pollution of the Black Sea, Mr. Dimitur Vodenicharov, minister of the environment, said in his welcoming speech to the meeting. The text of the convention was agreed upon and approved at an intergovernment conference in Ankara on March 28 and it is open for signing.

The convention is accompanied by three protocols: on restricting and preventing land-to-sea pollution, on restricting deliberate waste dumping, and on the terms under which the countries can dump harmful substances that can be absorbed in the sea or can be dispersed by large water masses, thus reducing their harmful effect. Ten chemicals whose dumping is absolutely forbidden are enumerated in a black list, while a grey list contains other chemicals which can be dumped only with permission from the coastal countries under specific terms.

The convention will be the legal basis of international cooperation among the Black Sea countries and will help Bulgaria out of its present condition of being the only sea region without a regional program and regional convention.

BULGARIA

Ruse Citizens Celebrate Ecology Day

*AU2909200991 Sofia BTA in English 1751 GMT
28 Sep 91*

[Text] Sofia, September 28 (BTA)—Today was the first anniversary of the first environmentalist rally of women in Ruse. Mr. Dimitur Korudzhiev, leader of Ecoglasnost, pointed out that it was also the first antigovernment rally in Bulgaria.

The participants in today's happening were pleased to hear that the chemical works in Giurgiu that have been polluting the town of Ruse on the Danube for years were closed down today. Numerous signatures had been collected in support of Ecoglasnost's demand to recall Bulgaria's ambassador to Bucharest until the final closing down of the works. At the appeal "If you want a clean and green Bulgaria, choose the blue ballot-paper," the crowd chanted "SDS [Union of Democratic Forces], SDS."

The Bulgarian Socialist Party (BSP)'s election campaign in the country goes at an inadmissibly low level. Some leaders behave cynically and barbarously in order to scare people and keep them in a state of stress, Mr. Mikhail Nedelchev, the spokesman for the SDS, said today, expressing the protest of the SDS's leadership against the "brutal personal attacks" of BSP leaders against SDS candidates.

Kozloduy Sixth Reactor Capacity Increased

*AU1609095191 Sofia Khorizont Radio Network
in Bulgarian 0900 GMT 16 Sep 91*

[Text] Our reporter Veselin Angelov reports that the capacity of the 1,000-megawatt sixth reactor of the Kozloduy Nuclear Plant was increased from 30 to 50 percent. Thus the reactivation program is being implemented in stages, until the reactor's full capacity is activated.

By increasing the reactor's capacity to 50 percent the shortage of power caused by the shutdown of the fourth reactor will be compensated for. The shutdown was caused by the leak of steam in the main circulation pump, which was the result of damaged insulation in one of the connections. This was pointed out by Engineer Kiril Nikolov, chairman of the Nuclear Power Supply Economic Trust.

The shutdown was effected by a decision of the Committee on Power Supply, and it will continue until 23 September. Until then a team of experts will perform the necessary isolation repairs of the circulation pump. Afterward the reactor will be activated.

Mr. Nikolov assured us that there is no danger of a radioactive leak. The radiation level in the vicinity of the nuclear plant is normal, within permissible limits.

Kozloduy Reactor Leak Reported

*AU1409192691 Sofia Khorizont Radio Network
in Bulgarian 1900 GMT 14 Sep 91*

[Text] Today the No. 4 reactor at the Kozloduy Nuclear Power Plant was shut down because of a leak of radioactive water, Reuter reports, citing sources at the nuclear power plant.

According to a statement by an engineer at the Kozloduy Nuclear Power Plant, the leak was caused by a defective pump, and the 440-megawatt reactor was shut down during the night of 13-14 September.

According to Reuter, no disruption was caused in the energy supply system. However, the repair of the reactor will take about 10 days and will lead to power shortages during the coming week. It is expected that the No. 4 reactor will be put back into service on 23 September.

Deputy Premier Agrees To Shut Two Kozloduy Reactors

*LD3009232291 Hamburg DPA in German 1606 GMT
30 Sep 91*

[Excerpt] Bonn (dpa)—Aleksandur Tomov, Bulgarian deputy chairman of the Council of Ministers, has agreed to shut down the two oldest reactors at the controversial Kozloduy nuclear power station during talks in Bonn today with the Environment Minister Klaus Toepfer. Once Block #1 has been removed from the network,

Block #2 will be shut down shortly afterward, said a statement by the Ministry for the Environment following the talks.

Considerable safety risks have been found at both reactors, with the result that the International Atomic Energy Organization pressed for the necessary steps to be taken. However, Tomov made it clear that the additional four nuclear blocks of the power station, of which only two are of more modern construction, must continue to be used so that the energy supply to the country can be guaranteed, at least until reconstruction work, which is in the pipeline, is carried out. [passage omitted]

CZECHOSLOVAKIA

Vavrousek Reviews Ecological Issues Facing Europe

*91CH0900A Prague TVORBA in Czech No 34-35, 1991
pp 8-10*

[Text of speech by Josef Vavrousek, chairman of the Federal Committee for the Environment for the CSFR, at the Dobris Conference on the European Environment; date not given: "The Environment—A Case Study"]

[Text] Following is the text of a speech made by Josef Vavrousek, chairman of the Federal Committee for the Environment of the CSFR, at the Dobris Conference on the European Environment, dealing with the topic of protecting the environment and European integration.

We Europeans are witnesses, victims, but at the same time even the originators of the continuing degradation of the environment, both on a continental scale and also on a global scale, some of which could be irreversible. In all countries, we are confronting serious ecological problems which have a dramatic effect upon human health and the economy, even though in some regions of Central, East, and South Europe these problems have become particularly acute as part and parcel of the undesirable heritage left behind by totalitarian regimes. Our emissions of acid-forming compounds, greenhouse gases, and other types of contamination are contributing to an increase in dangerous global problems, such as acid rain, the destruction of the ozone layer, and climatic changes on a worldwide scale.

However, we also have new opportunities. One of these is the general heightening of ecological awareness among the broadest public and among the majority of the political forces of our continent. A second opportunity is based on the efforts of Central and East European countries to create democratic political structures and—at the very least in some regions—to provide a foundation for a socially and ecologically oriented market economy. We may either utilize this opportunity or lose it.

More concentrated, more coordinated pan-European activities, which enjoy strong support, can expressly

improve the environment, they can even create a natural basis for the next integrated Europe, or perhaps even the entire planet, which is equally important. If we lose these opportunities, we risk the deepening of the frustration of people, particularly of the young generations. In Central and East Europe, we even risk an explosion of efforts to renew totalitarian regimes or to introduce uncontrolled market economies, both of which would lead to further merciless devastation of natural resources and to the further destruction of the environment.

Even now, we are quite considerably late if we wish to take some kind of deliberate action to support the environment, if we wish to provide better coordination for solutions of our ecological problems, and if we wish to respond to related political, economic, and social questions. Unilateral and isolated partial activities can be only partially effective in view of the complexity of human behavior and due to the interconnection of both continental and also planetary ecosystems.

It is time to weigh the degree of threat and the opportunities to achieve rectification, to analyze the situation, and to reevaluate our plans and strategies. We are at a crossroads which has many question marks and many possible solutions. In my opinion, the three following tasks are the most important:

a. To achieve fundamental improvement in the functioning of existing European institutions dealing with the protection and creation of the environment, both on a national level and also on an international level, and to integrate them into a pan-European system or "mechanism," which would coordinate efforts to improve the environment on the continental level; this future European system for protecting and creating the environment should then be established as part of a similar system for protecting the environment on a global scale.

b. To create and adopt a program for the environment for Europe and periodically review it as a common framework of activities aimed at protecting and creating the environment; we should regard Europe as being a unique and extremely fragile ecological unit.

c. To search for human values and ethics involved in a permanently sustainable development as a basis for the type of life which would once more bring humankind into harmony with nature.

All of these goals are mutually interconnected. We cannot plan the renewal of the environment in Europe without having a well-functioning mechanism for evaluating pan-European situations, established priorities, and without making the most efficient use of human, informational, and financial resources and activities; we cannot hope for an improvement in the environment without deep changes in attitudes toward life, without reevaluating the criteria for decisionmaking in our private and public life.

A. The Future European System for Protecting and Creating the Environment as Part of a Worldwide System

An analysis of the actual status of the system for protecting the environment in Europe indicates that it is important to achieve the first goal of the conference. The first glance already indicates that it is clear that the situation is extremely unbalanced. The western portion of Europe has generally well-established national organizations for protecting the environment, whereas in the post-totalitarian countries of Central and East Europe there are only the newly established ministries for protecting the environment or other organizations.

What is even more dangerous is the fact that the inevitable demise of the Council for Economic and Mutual Assistance (CEMA), which was based on the political domination of its largest member country, means the demise of platforms for coordinating national activities in Central and East Europe. On the other hand, in the western portion of our continent, there are several overlapping international or even national organizations working in the environmental protection field which are doing extremely important work, but frequently without adequate coordination. The imbalance between the "institutional vacuum" in coordinating environmental activities in Central and East Europe on the one hand and the "institutional overcrowding" in West European territories, on the other hand, does not create a solid foundation for the desirable and necessary improvement in the status of our common environment. The natural consequence of this situation is the nonexistence of a pan-European ecological policy.

However, there is also inadequate coordination on the global scale. The United Nations Environmental Program (UNEP), the solitary worldwide organization for environmental protection, is primarily occupied with developing countries, which is very likely the only method by which limited resources can be utilized in a sensible and just manner. The institutional framework for global environmental protection and creation and its financial support within the United Nations system are factors which are not adequate for the extent, seriousness, and fatal threat of destroying the environment on our planet. We must make use of the United Nations Conference on the Environment and on Development, which will be held in Brazil next year, so that the position of the environment might be substantially strengthened throughout the structure of the United Nations, with special emphasis on Europe.

There are several opportunities to improve the institutional framework of collaboration in the area of the environment on our continent.

The first natural step is to organize regular conferences of all European ministers responsible for the status of the environment (most likely, once a year), in the inspiring spirit of the Dublin and, let us hope, also the Dobris traditions. By the way, from this particular viewpoint, Europe is way behind Africa, where such conferences

have been held since 1985, and behind Latin America and the Caribbean region. These conferences could be converted into an Environmental Council of European Ministers, perhaps with a limited administrative staff which would meet on a cyclical basis in European countries. The council could oversee the evaluation of the status of the environment on our continent, could set priorities and goals and determine activities designed to meet these goals, it could coordinate the establishment of a European monitoring and informational system, it could strengthen and unite European legislation in the environmental field, and develop a pan-European strategy for renewing the environment, a strategy which should encompass concentrated programs and projects together with adequate financial support and a system of ecological education. The council should develop its activities in close collaboration with ecologically-oriented nongovernmental organizations.

Another step in the direction of a European environmental protection and creation system should be the establishment of a European Environmental Agency (EEA) as a pan-European institution, corresponding to the proposals of European societies, but which would, from the very beginning, be open to all interested countries of our continent on the basis of equality. The agency could be financed by all of its member countries and could be directed (or controlled) by the conferences of the Environmental Council of European Ministers. The Czech and Slovak Federal Republic would be pleased to have this agency located in Prague. The agency could play such an important role in a future Europe that, in this case, we could forget the principle, according to which "no new institutions" should be created, particularly should the existing European ecologically-oriented institutions become integrated within the framework of the European environmental protection and creation system, which would have a special, well-interconnected, and coordinated role. This system could have a very "planar" network structure without creating new bureaucratic and centralized monsters.

All of these steps will assist in the creation of a future European environmental protection and creation system which would operate both under normal circumstances and also in emergency cases in the case of disasters and calamities, which would encompass all existing European organizations aimed at protecting and creating the environment, particularly the already existing institutions of the European Community. This system could make a basic contribution to increasing the efficiency of activities in the environmental field and could serve as a model for the next integrated and at the same time decentralized Europe.

The nascent European system for protecting and creating the environment should be viewed as an integral portion of a future specific worldwide system. The current global economic situation is so bad and the momentum of current economic, social, and political trends leading to the exhaustion of natural resources and the destruction of the environment is so great that there is no other

choice. We Europeans must make a contribution toward changing the existing United Nations system which is overburdened by a long tradition of the "multiple-layer" approach and strengthen ecological thinking within it. An efficient United Nations system for protecting the environment, which is oriented toward the deliberate utilization of natural resources on our planet and the revival of its environment, can form one of the principal pillars of the entire UN system, together with the UN security system to prevent conflicts and threats or a force to solve these conflicts and threats, with the UN economic system supporting development and the UN social system aimed at education, culture, health, and other aspects of social life on our planet. Let us hope that by coordinating the activities of the four UN systems we may find a better solution for existing problems and prevent future ones by renewing the foundations of mutual unity among mankind and nature.

There are several possibilities for strengthening the "fourth pillar" of the United Nations system. The most promising is to establish a World Environmental Organization (WEO) as an agency to coordinate ecological efforts on a global scale. A future WEO could be established using the existing structures of the UNEP. The proposed WEO should contain the idea of a "planar" network of an institutional structure with a comparably small coordination center which could be established on the basis of the existing UNEP Secretariat in Nairobi and which could have several truly autonomous continental environmental protection centers pursuing the same, generally "planet-wide" strategy. One of these centers could be the European Environmental Protection Agency of the United Nations (EEO) which could come into being from the regional UNEP office for Europe or from the UN European Economic Committee. The EEO could also play a part as the Secretariat for the Environmental Council of European Ministers and, in this way, be an actual integral part of the proposed European environmental protection and creation system. Similar developments should be supported on other continents—we may anticipate the establishment of a United Nations African Environmental Organization, a UN American Environmental Organization, etc. The extent of activities of the various continental environmental organizations could be quite varied—it would most likely be broader on continents whose territory is divided over a large number of countries (such as, for example, Europe) and narrower on continents housing a small number of countries.

The future World Environmental Organization, including the European Environmental Organization, could form one of the basic building blocks of a world security system, responsible for security in the environmental area on our planet.

To the extent to which we consider the idea of an Environmental Council of European Ministers to be a productive one, we can decide, at this conference, that we recommend it to our governments and that we shall establish it as soon as possible. To the extent to which we

can collectively support the idea of a UN European Environmental Organization within the framework of a universal UN World Environmental Organization, we may recommend it as one of the key subjects for discussion in the third basket of the UN Conference on the Environment and on Development in Brazil for next year.

B. On the Environmental Program for Europe

The existing, and moreover the threatening problems of the environment on our continent are mutually interconnected by numerous and frequently complicated threads. We may see the unfavorable effects of our activities far from the locations of their origin with shorter or longer time delays—we are threatening the present as well as the next generations and even life itself on our planet. The traditional "cause and effect" scheme, as an immediate feedback instrument which is deeply anchored in our thinking, is not functioning; it may no longer be used as a basic rule for decisionmaking. The power of "northern" countries—for example—is based on emissions of carbon dioxide, which contribute to increasing global temperatures and thus cause a rise in the levels of the oceans which threaten Bangladesh.

We live in a world where no single country or group of countries can use its own isolated efforts to assure protection of the environment without taking into account how intensive these efforts are. We are living in a mutually dependent world where solidarity between various nations, countries, and continents is not only a manifestation of altruism, but also of wisdom.

I believe that we Europeans are in need of an entirely undivided environmental program for our continent as a framework for coordinated national and international efforts. This program could be the most important consequence of the proposed European environmental protection and creation system and could, at the same time, be the means for strengthening it.

The European environmental program should primarily set both the priorities for the rectification or elimination of environmental damage and should prevent further damage on the continent. European strategy in this field would then be focused primarily on the following:

- a) Creating a unified monitoring and information system for the environment in Europe.
- b) Unifying and strengthening European legislation in the environmental area.
- c) Creating effective economic instruments within the European economic system.
- d) Perfecting the level of European research, education, and training in the environmental area.
- e) Supporting technological programs and projects aimed at renewable energy resources, reducing the volume of waste products, and supporting ecologically frugal technologies and products.

f) Initiating specific European regional programs and cooperative projects oriented toward solving the most important ecological problems in critical areas and toward renewing the ecological stability of the European countryside.

g) Creating resources intended for realization of the environmental program for Europe, to include human resources, financial resources, information resources, and others.

Let us, for the moment, set aside considerations of political borders outlining our continent and let us rather concentrate our attention on more natural lines dividing watersheds and maritime regions, industrial areas, residential areas, and agricultural regions, foothills, and historical linguistic and cultural regions; some encouraging examples already exist, such as the cleanup of the Rhine River watershed. This example should be followed by efforts to clean up additional international watersheds, such as the Oder River, the Danube, and others.

Complicated ecological, economic, and social problems can be solved by countries such as Czechoslovakia only in collaboration with their neighbors; in this area, this will involve particularly joint programs in the industrially polluted Silesia or in the "black triangle" of Czech, Polish, and German coal mines close to our common border, a project which will be even more difficult.

A future European environmental program could be one of several integrated pan-European programs, including the European energy program, proposed by the prime minister of the Netherlands, capable of responding to present and future dangers. It is vitally important to integrate ecological awareness with socially and economically oriented development. On the other hand, the European environmental program should be a contribution toward the desirable global ecological program, which could possibly be coordinated by the proposed World Economic Organization. This free network of mutually interconnected programs could establish a long-term permanent general strategy for permanently sustainable development on the continental as well as on the global level, and yet retain the essential flexibility of regional, national, and international organizations. All of these ideas can be realized only with the support of countries which have long years of experience in the area of the environment. That is why I am pleased that our colleagues from the United States, Canada, and Japan are here with us.

C. The Search for Human Values To Achieve Harmony Between Humanity and Nature

This search is the most essential, but also the most difficult to achieve goal of our conference. Europe was the cradle of human values which virtually changed the entire world, represented an enormous social leap forward in some locations on our planet, but, at the same time, created complicated ecological problems by the rapid drawing down of natural resources on our planet,

by killing large quantities of species, and by destroying many special, but also sensitive human cultures on all continents. We must learn from history and from our fateful mistakes. At the same time, we should again discover the value of modesty and we should remember that people long ago knew the secret of coexisting with nature and that this art continues to exist in many parts of the world.

We must again introduce responsibility for our lives and for the environment of man among the criteria of our decisionmaking. We must protect nature not only for the good of mankind, but mainly for its unique internal value. We must again discover Albert Schweitzer's philosophy of "respect for life." We must also find sufficient wisdom to analyze the enormous quantity of knowledge which has been accumulated by people in recent centuries and decades, derive several general rules for human conduct from this knowledge which are compatible with permanently sustainable development, and we must adopt these rules.

I hope that you consider these three principal topics of the conference to be important and urgent—something which can be judged even on the basis of your presence here. The upcoming brainstorming discussion should concentrate primarily on precisely defining open questions because this is the only way of finding useful answers. We do not have overly much time and our responsibility is enormous. We ecologists should not only see to it that we get a more efficient institutional structure and prepare a better program for the environment, but we should also offer people new and less egoistic lifestyles.

Environment Minister Interviewed on Gabčíkovo Dam Project

*AU1809103891 Prague LIDOVE NOVINY in Czech
16 Sep 91 p 2*

[Interview with CSFR Environment Minister Josef Vavrousek by "(crk)" and "(top)"-signed reporters, in Prague; date not given: "A Dispute or a Dialogue?"]

[Text] Prague—Following his return from Budapest, Minister Vavrousek answered a few questions from LIDOVE NOVINY.

[LIDOVE NOVINY] Which of the two sides should now make a specific move to ensure that good spirits are not all that remain from your visit to Hungary?

[Vavrousek] At the moment, it is the Hungarian parliament's turn to make a move; it can untie its government's hands. I expect events to start moving within 10-14 days.

[LIDOVE NOVINY] The project's supporters are only using ecology as a crutch and, of course, have oscillated toward Minister Tirpak's 19 points. Is there not a danger that two monologues will again develop on the same level—concrete pourers and a manipulated Slovak

public on one side and nature conservationists, residents, and the whole of Hungary on the other side?

[Vavrousek] I hope that the discussion in the Hungarian parliament will contribute toward a dialogue. We consulted with nature conservationists and with the Green Party on the point of view we put forward. At the same time, there were no discrepancies. Understandably, the residents of Zitny Ostrov [Rye Island], who have seen the project's development with their own eyes, have adopted an absolutely specific stance. Therefore, their representatives were invited to the Hungarian parliament as observers. Each of the proposals submitted, including the variant that would mean a return to nature, have to find their way onto the negotiating table.

[LIDOVE NOVINY] What kind of understanding for your mission did the Slovak prime minister demonstrate in your meeting prior to your departure?

[Vavrousek] We agreed with the Slovak prime minister on our point of view—later adopted by the federal government without any changes—during a six-hour meeting held on 15 June.

National Council Passes Laws on Pollution

*AU1809091291 Prague HOSPODARSKE NOVINY
in Czech 11 Sep 91 pp 1, 2*

["st"-signed report: "Strict on the Polluters"]

[Text] The first fall-session meeting of the Czech National Council took place in Prague yesterday. An emotional testimony about the lives of Czechs in war-devastated Croatia by V. Hradská, deputy chairman of the Government International Relations Committee, provided a prologue to the talks planned to continue for three days.

She spoke about the difficult conditions faced by the 15,500-strong Czech community, the third largest in the republic, and about the danger of massacres by Serbian terrorists. She also pointed out the possibility that the Slovak minority in Serbia could be used as hostages. After that, the deputies honored by a minute of silence the memory of all Czechs murdered in Croatia.

Deputy A. Gjuric (Civic Democratic Party) moved that the money from the fund for the aid to Volhynian Czechs not drawn this year be donated to Czechs and Slovaks in Croatia. Deputy H. Nemcova (Civic Forum—independent) appealed to her fellow deputies to contribute from their own pockets to this humanitarian action. The assembly approved the attitude of the Czech Government, which immediately released 3 million korunas for Czechs in Croatia, the planned shipment of medical material to that country, and the transfer being prepared of old people, women, and children from Croatia to their old country.

The idea was also voiced of creating a Czech body of state administration with all powers, which form Czech

foreign policy in accordance with the Czechoslovak one. A similar proposal is expected to be submitted at the October session of the Czech National Council.

Next on the agenda was ecological legislation. The bill on the administration of the protection of the atmosphere and on fines for air pollution, presented by I. Dejmál, Czech Republic minister for the environment, was passed without any changes. It is linked to the federal Legal Norm on Atmosphere that goes into effect on 1 October. The bodies of state administration are—the Ministry for the Environment, with the main task of supreme state supervision, and the Czech Environment Control, which controls the conformation to the imposed emission limits by large and medium sources of pollution. The fees to be paid by 1700 major polluters are within the jurisdiction of the Control, the fees by the medium polluters—there are more than 2,000 of them—are within the jurisdiction of district offices, and community bodies are to collect the fees from small polluters.

The operator is responsible for calculating the amount of the fee and reporting always by 15 February the results calculated according to the previous year's data. If he has demonstrably started working on a reduction of the emissions, 40 percent of his fees would be suspended. If he completes the work according to the set conditions, the unpaid fees may be excused. The fee tariffs (for the large and medium sources) are set in a law supplement. For example, the tariff for a ton of solid emission is 3,000 korunas, for carbohydrates 2,000 korunas, class one pollutants 20,000 korunas, etc. The law also defines powers to announce and recall warnings and regulatory measures in smog situations.

Another point on the agenda was a bill on the state fund for the shaping and protection of the Czech Republic environment. It could reach as much as 6 billion korunas within the next five years and it could become an effective instrument in improving the environment. All fines and penalties will go into it, as will subsidies from the state budget, receipts from public collections and lotteries, etc. It is expected that subsidies, loans, and credits for environmental operations would be provided from this fund.

The bill on the state fund for the environment was passed in the afternoon. The deputies also accepted another bill in the series of education laws—the bill on preschool and school institutions, which also in several instances applies to providing services for a payment.

The Czech National Council also opened a discussion about the bill on the Chamber of Veterinarians, the operation of which should be important for the development of private veterinary practice. In view of the large number of proposed changes, and the uncertainty whether membership in this professional organization should be compulsory for all vets, the bill was referred to the Constitutional and Legal Affairs Committee for evaluation.

The assembly then discussed a bill on the salaries of judges, public notaries, and articling lawyers and judges. The judges' and lawyers' salaries proposed by the government range from 6 to 12 thousand korunas [per month] according to group and rank, the president of the Czech Republic supreme court is awarded 18,000 korunas, and the deputy president 15,000 korunas per month. In addition, there would be work bonuses—for example, a district court president would receive 1,600 korunas—and premiums for representation, as well as other payments. The adopted law will go into effect on 15 October, i.e. the salary increases in the Czech justice will cost approximately 20 million korunas by the end of the year.

POLAND

Sejm Adopts Law on Environmental Protection

AU2409102991 Warsaw RZECZPOSPOLITA in Polish
20 Sep 91 p 1

[Kazimierz Groblewski report; "Refugees Receive Refugee Status"]

[Text] At its Thursday session, the Sejm adopted a law on environmental protection and amended the laws on refugees and cooperatives.

The decision to grant refugee status will be made by the interior minister, on the foreign minister's recommendation. Refugee status will be granted in accordance with the provisions of the following international conventions, which Poland has ratified: The 1951 Geneva Convention and the 1967 New York Protocol.

The costs incurred by deporting an alien will be borne by the person who invited him to Poland or who attempted to employ him illegally. If no decision on deportation is reached, the alien may be confined to guarded premises for up to 90 days.

There was a long debate on the subject of the law on environmental protection. Speaking on behalf of the Citizens Parliamentary Club [OKP], Deputy Lech Kozačko called upon the House to reject this law. He complained that the law deals mainly with personnel matters and spheres of responsibility and creates new bureaucratic structures such as directors of country parks. But the remainder of the House, including some OKP deputies, supported the law's adoption.

The law was finally adopted by 219 votes in favor, 16 votes against, and 20 abstentions. It creates the new posts of chief nature conservator, to be appointed by the prime minister, and voivodship nature conservators, to be appointed by the voivodes. It introduces sharper penalties for willful damage to the environment.

ROMANIA

Sunken Soviet Ship Poses Ecological Threat to Danube Delta

AU1609113391 Bucharest ROMPRES in English
0903 GMT 16 Sep 91

[Text] Another drama—ecological this time—is threatening the Sulina Channel in the Danube Delta, an article in the daily TINERETUL LIBER of 14 September warns.

Not only has the sunken Soviet cargo ship Rostock blocked domestic and international traffic on the channel, it also is a source of ecological damage the scope

of which can hardly be perceived and predicted, the author of the article, Dr. Cristian Stoiculescu, says.

Should the wreck not be removed before winter sets in, floating ice on the channel may form a dam behind the ship causing the water to rise and burst its banks, bringing disastrous floods. As the water has made its way past the two ends of the wreck, two solutions seem to have emerged: Either to dig an underwater channel or to remove the wreck. Both are highly aggressive ecologically because a side channel "inflicts a deep wound on the delicate body of the delta that will take time to heal, to say nothing of its irreversibly changing the landscape" as well as the functions of the delta and its ecological balance, Dr. Stoiculescu argues.

BRAZIL**Amazon Ecologist Survives Sixth Attempt on Life**
*PY1309181491 Madrid EFE in English 1512 GMT
13 Sep 91*

[Text] Rio Branco, Brazil, Sept 13 (EFE)—An internationally recognized Brazilian ecologist told newsmen Friday how he escaped death when a pistol aimed at his head jammed three times.

Antonio Macedo, who has angered land owners and developers by leading a campaign to prevent the destruction of the Amazon rain forest by miners and settlers, said it was the sixth attempt on his life in eight years.

Macedo named his would-be killer as Francisco William Freitas, and said the attempt was made in the town of Villa Thaumaturgo, in the northwestern state of Acre on Sunday.

A friend of the late Chico Mendes, the Amazon rubber tappers union leader murdered by gunmen in the pay of wealthy landowners in December 1988, Macedo is an adviser to unions helping poor Amazon laborers.

Freitas, who has been arrested for the attempt on Macedo's life, has a record of illegally taking Amazon timber and for trespassing on the reserve of the Kampa Indian tribe.

Amazonia Deputies Call for Dismissal of Environment Secretary

*PY1109194991 Madrid EFE in English 1839 GMT
11 Sep 91*

[Text] Brazilia, Sept 11 (EFE)—Deputies from the Brazilian state of Amazonia called on President Fernando Collor de Mello on Wednesday [11 September] to dismiss National Environment Secretary Jose Lutzemberger over charges that he received cash from foreign environmental groups. "The president has to fire this traitor from the government", said deputy Atila Lins, president of a congressional commission which is investigating the activities of religious sects in the Amazon region.

Lins said that Lutzemberger was heavily involved with international organizations and businesses which, under the pretext of preserving the Amazon's resources, were trying to control the region and damage the livelihoods of its residents.

"Like a real agent in the service of the multinationals and foreign governments, everything related to the Amazon, whether hydroelectric projects, roads, timber extraction, Lutzemberger votes against it in international meetings," Lins said.

He added that Lutzemberger's personal finances should be inspected for evidence of possible corruption.

Foreign involvement in the Amazon has long been a contentious issue in Brazil, where many people suspect foreign organizations and governments of wanting to take control of the region so that they can exploit its valuable mineral and timber resources.

Environment Secretary Criticizes Government's Amazon Policy

PY2009142691 Sao Paulo O ESTADO DE SAO PAULO in Portuguese 19 Sep 91 p 14

[Excerpt] During a tense declaration before the Congressional Investigating Committee that investigates the internationalization of the Amazon, Secretary of Environment Jose Lutzemberger said the economic and agricultural policy implemented by the government in the region has harmed the ecological system. This situation is reflected in huge deforested areas, polluted rivers, and exhausted mineral reserves. Lutzemberger said: "All this damage just favors foreign groups." He added: "This is the result of the Amazon's internationalization."

According to Lutzemberger, foreign groups occupy 367,600 square kilometers, "an area larger than the territory of the unified Germany." He said this region was occupied with the money of the contributors, thanks to the tax-exempt policy.

He cited as an example the case of the Volkswagen enterprise, which 10 years ago occupied 500,000 hectares in the southern part of Para State. He said: "Volkswagen deforested 200,000 hectares and exported 300,000 mahogany logs," adding that it "set up a slaughterhouse, gave up the project, and then sold the land."

According to Lutzemberger, minerals such as gold and tinstone leave the country illegally, and the evangelical missions are perverting the indigenous culture. "They want to convert the Indians to Christianity, but they have nothing to offer but ostracism and acculturation. The secretary indicated that the preservation of Amazonia will put an end to those concerns. "Sovereignty means preservation." [passage omitted]

Neonationalist Crusade for Defense of Amazon Gains Strength

PY2509141491 Sao Paulo FOLHA DE SAO PAULO in Portuguese 23 Sep 91 p 6

[By Belem correspondent Abnor Gondin and Manaus correspondent Efreim Riberirol]

[Text] A neonationalist crusade for the defense of the Amazon is gaining strength. The fear that the Eco-92 [UN World Conference on the Environment] and environmentalist talks will result in restrictions on national sovereignty in the region are the driving forces of this movement.

The warning, "the Amazon is ours," made by Governor Gilberto Mestrinho, 63, is working. It has received the

support of members of the military, legislators, businessmen, ecologists, PT [Workers Party] members, and the church.

Neonationalism has become a subject of discussions at various ecological meetings in Brazil. In Belem, during the meeting of Marajo Island (Para State) representatives, comments were made against "foreign intervention in the Amazon." "Nationalism is back in fashion throughout the world. The Soviet bloc set the example and we cannot stay with our arms folded," commented ecologist Camilo Viana, 65, of the Society for the Preservation of the Natural Resources of the Amazon.

Viana was the first Brazilian ecologist to request the dismissal of National Environment Secretary Jose Lutzenberger for saying that the generals who defend the region's sovereignty are "foolish" and "ridiculous." Ecological awareness gained congressional support with the CPI [Commission for Congressional Investigation] regarding the internationalization of the Amazon. Lutzenberger, who appeared before the CPI last week, said the idea "is a joke."

CPI President Deputy Atila Lins (PFL-AM) [Liberal Front Party for Amazonas State], 40, not only wants Lutzenberger, the main enemy of neonationalists, dismissed but also wants the IBAMA [Brazilian Institute for Environmental Affairs and Renewable Natural Resources] to be dismantled, all because they allegedly are representing foreign interests in the region. "Ecology has become a matter of national security," says Deputy Oswaldo Melo (PDS-PA) [Social Democratic Party for Para State], 60. Deputy Jose Dutra (PMDB) [Brazilian Democratic Movement Party] wonders: "Who knows whether the United States, under the pretense of defending the interests of the region, will not deploy troops in the Amazon as it did in Grenada or Iraq?"

When politicians criticize French President Francois Mitterrand and Prince Charles for defending the idea of "restricted sovereignty" in areas of world interest, the crusade's military wing is encouraged to fight for resources for the Calha Norte Project [establishing a belt of military garrisons in northern border areas]. The crusade's first line is made up of Generals Thaumaturgo Sotero Vaz and Antenor Santa Cruz, of the Amazon Region Military Command.

Sotero Vaz has promised to give foreign ecologists who try to internationalize the Amazon region "a beating." Santa Cruz threatened to "Vietnamize" the region to protect it from foreign greediness.

An important point for the movement's ideologists is the support they get from groups that usually are opposed to antiecological theories. Amazonas State Federal Deputy Ricardo Moraes, of the PT, defends the "hunting of alligators that are eating the fish that should be fished by natives." Bishop Antonio Possamai, 60, of the CNBB-Norte 1 [National Conference of Brazilian Bishops-North Area One], said he regrets "the invention of fables to protect monkeys while no one says anything about the

forest peoples." According to Antonio Moura Fairm, of the Coordinating Board of Amazon Region Indian Organizations, Indians will boycott Eco-92 because "rich countries see the Amazon region only in terms of a sanctuary for trees and animals."

The same tone was heard during a meeting of Amazon region businessmen in Belem that ended two weeks ago. The meeting closed with the slogan: "The Amazon region's environmental protection must be in line with national sovereignty considerations." For Aldebaro Klautau Filho, of the Para State Federation of Industries, "the position was an act of patriotism."

Amazon Mercury Contamination Poses Risk of 'Massive' Numbers of Poisoning Cases

PY1609181891 Madrid EFE in Spanish 1531 GMT 16 Sep 91

[Text] Rio de Janeiro, 16 Sep (EFE)—The Mineral Production Department of Brazil has reported that about 1,200 tons of mercury is contaminating the Amazon River and its tributaries. It has been dumped into the water by gold seekers over the past 50 years.

According to this organization, the mercury has begun to harm the inhabitants of the Amazon region.

Several experts have warned that there is a risk in Brazil of massive numbers of poisoning cases, like in Japan during the 1950's when hundreds of people died after eating fish poisoned by mercury.

In Tapajos region, where 500,000 people live, the number of people poisoned by mercury has risen from 20 to 132 in the past two years.

In Itaituba district, the largest in Brazil, patients have been hospitalized with up to 1,120 micrograms of mercury in their bodies. According to the World Health Organization (WHO), the maximum mercury concentration tolerated by man is 50 milligrams. [weight units as received]

Brazilian Environment Secretary Jose Lutzemberger said that something must be done "urgently" to solve the problem, otherwise, he said, "it is like sitting on a time bomb."

Biologist Olaf Malm from the Rio de Janeiro Federal University has said that although physical contact with mercury is not harmful, the inhalation of its vapor or its ingestion through poisoned fish is dangerous.

Hydrochloric Acid Spill Produces 'Toxic Cloud'

PY1909023091 Rio de Janeiro Rede Globo Television in Portuguese 2300 GMT 18 Sep 91

[Text] A toxic cloud produced by an acid spill has endangered the health of 3,000 people in Nova Lima, Minas Gerais. The acid poured from a chemical plant in the town.

The spill began at the Cataguases chemical plant last night. In a short period of time, more than 6,000 liters of hydrochloric acid poured out, producing a white cloud that spread over several nearby neighborhoods. The toxic cloud affected 3,000 people. The acid is flammable and can cause third-degree burns and irritate the eyes, nose and throat.

Fire brigade members worked throughout the early morning hours. The spill was controlled this morning. The acid that accumulated in potholes has continued, however, to produce toxic gas.

Fire brigade members performed a technical inspection at the company and found that the spill occurred in that white tank, which can store up to 12,000 liters of hydrochloric acid. [video shows chemical holding tank] Fire brigade members said one of the pipes that carries acid to the production unit was corroded. The acid poured out through a hole caused by the corrosion.

This drainage pipe took the acid outside company facilities. [video shows drainage pipe] The acid crossed a village and reached this stream [video shows stream], reaching the Das Velhas River, 500 meters from the company. The river provides 70 percent of the drinking water for the metropolitan region.

Technicians from the state environmental secretariat inspected the company. Cataguases workers placed lime over the acid, and fire brigade members erected earth barriers to stop the acid.

The people of Nova Lima are disgusted. This is the second acid spill at the plant in three months.

Technicians said that the acid did not contaminate the water that supplies the metropolitan region of Belo Horizonte.

The Cataguases chemical industry has been (?suspended) and may have to pay a fine of up to 1 million cruzeiros.

CHILE

Fishing Law Seeks To Reconcile Environment, Economy

PY3009020491 Santiago Television Nacional de Chile
Network in Spanish 0030 GMT 29 Sep 91

[Text] After more than one and a half years of legislative work, President Patricio Aylwin today signed the decree implementing the new fishing law.

During a ceremony at Caleta Portales, Valparaiso, the president urged the people to overcome the country's problems through dialogue.

Chile is essentially a maritime country; it has 4,000 kilometers of sea coast. Given this geography, fishing is one of the principle activities that should be regulated by law. After barely one month in office, President Aylwin had to decide whether to implement a fishing law drafted

under the military regime. Widespread opposition to this law prompted Congress to vote for a postponement in order to permit a more detailed analysis of the law. The National Fishing Commission was created. In July 1990, this commission proposed amendments that it deemed appropriate. After one year of hard legislative work, the bill was approved and the president signed it today.

[Begin Economy Minister Carlos Ominami recording] The idea was to reconcile the environment and the economy, which many people see as essentially opposite factors. Today, we are pleased to say that this dual task, which seemed so difficult some time ago, has been accomplished thanks to the overwhelming support of all of you—workers and businessmen—engaged in this activity. [end recording]

The implementation of the law was celebrated in the port of Valparaiso. This law reflects the fact that closed seasons and minimum size requirements are not enough for certain species. It establishes fishing quotas and maritime preserves and parks. Among other things, it rules that the first five nautical miles off the coast are reserved exclusively for small-scale fishermen so as to protect their livelihood, one of the main obstacles to implementation of the law.

Even though it was not on the agenda, President Aylwin made an impromptu speech.

[Begin Aylwin recording] I believe this experience has taught us a lesson. We Chileans can overcome our differences of opinion. We are different, we have different ideas. The way to success and to aid the fatherland, however, is not by being stubborn and hardheaded, but rather by generously opening mind and heart in the search for agreements. This is the way to build the fatherland. [end recording]

One out of every nine dollars that the country earns comes from fish exports. The law that President Aylwin signed today opens up a new stage for this economic activity, which employs more than 100,000 people in Chile.

COLOMBIA

National Environmental Policy Drafted

91WN0710B Santa Fe de Bogota EL TIEMPO
in Spanish 11 Aug 91 p 1B

[Article by Angela Sanchez: "Now He Who Pollutes Pays"]

[Text] Colombia had to wait until a third of its forests had been destroyed, 49 percent of its soil had been eroded, and more than 40 percent of the population had been exposed to diseases of environmental origin such as cholera before the politicians finally undertook to organize the ecological sector.

It will fall to the government of Cesar Gaviria to implement the reorganization of the sector, which has been in the works for three years. For the first time, a national environmental policy plan will be drafted in an effort to put some order into the weak and chaotic management of the ecological problem, and to give it greater status and more financing.

If the plan proposed by the National Department of Planning (DNP) and the INDERENA [Institute for Development of Renewable Natural Resources] this week is translated into deeds, the people of Colombia will be able to exercise their right to demand a healthy environment. They would then receive compensation from the state or from private parties who pollute the air, soil, or water, or who exceed tolerable sound levels. They would then have access to support from the Office of the Attorney General and the Ministry of Environment to ensure that those guilty of depredation and the invasion of public space would be punished. Fines would be paid for polluting, and exemptions would be granted for conservation.

Although in this sector there is an abysmal contradiction between the plans on paper and the reality, the program approved by the National Council for Economic and Social Policy (CONPES) is a response to a crisis which goes far beyond the institutional management of the INDERENA, which is under the jurisdiction of the Ministry of Agriculture.

And therein lies the first contradiction, since this ministry is one of the departments in the state apparatus most unsympathetic to environmental concerns. The improper crop-raising and livestock-breeding activities in forests not suited to these activities are responsible for the loss of biodiversity and genetic animal and vegetable wealth; for the erosion, acidification, and salinization of the soil; and for the pollution of water and foodstuffs with agrochemicals. Between 1978 and 1989, more than 618 persons were poisoned with pesticides, with a frightening average of 63 deaths per year.

Because of the dispersal of environmental authority among the Ministries of Health, Mines, and Energy and regional corporations with ambiguous authority on matters of development and conservation, as well as a whole host of other bodies, no one has reacted to the abuse of our resources. Eighty-five percent of our industries empty their effluent into the rivers and seas. The figure for the basin of the Magdalena River is 40 percent, that for the Cauca River 34 percent, and that for the industries along the Bogota River 77 percent. Ninety-six percent of the municipalities empty their untreated sewage into rivers which also supply the population with water.

The sedimentation of the rivers is due mainly to the mining industries which produce gold, emeralds, coal, gravel, and sand. In the Choco biogeographic area, which is regarded as the richest in the world in terms of biodiversity, gold extraction is devastating a thousand

hectares every year. It empties 4,400 tons of solid waste and lethal doses of mercury, exceeding the permitted levels by 100 times, into the rivers which supply black and Indian communities.

The national atmosphere is being thinned by the emission of 137 million tons of carbonic gas, 90 percent of which comes from the cutting and burning of forests. In the cities, 65 percent of this gas is produced by vehicles, which also generate noise pollution. The permissible noise levels—50 decibels during the daytime and 30 at night—are exceeded, with levels reaching up to 95 decibels in some zones of Bogota and 73 in Medellin. Auditory, respiratory, and ophthalmological ailments are the principal effects of urban environmental neglect.

On the basis of a diagnosis which is merely outlined here, the government, represented by a team coordinated by Manuel Rodriguez, the administrator of the INDERENA, and Eduardo Uribe, the director of the Environmental Division of the DNP, is proposing to carry out an institutional reorganization. It will include the establishment of a Ministry of Environment responsible for putting order into the scattered management efforts and exerting an influence on the decisions of the state and private business bodies which affect the environment.

This ministry, which will replace the INDERENA, will be the guiding body and will formulate the environmental policy to be handed down to the old and new Autonomous Regional Corporations, among other bodies, which will take over the management of resources, consistent with the special characteristics of each zone.

Aggressive Ministry Policy

With a view to imbuing all sectors, in particular the production sector, with concern for the environment, a National Environmental Council, the equivalent of an ecological "CONPES," will be created. Headed by the Minister of Environment, it will be a quadrilateral body wherein other ministers and decentralized bodies will coordinate activities in order to reconcile development with conservation. The state bodies will have environmental units to complement this organization.

The establishment of a national parks department to function as a directive body under the new ministry is also being proposed. It would provide the guidelines for the administration of the 42 preserves and sanctuaries for flora and fauna, in which plans for ecological tourism will be encouraged.

The department will, however, delegate the administration of some parks, on the basis of prior authorization from the environmental council, to public bodies (Indian municipal councils, "green" councils, municipalities, corporations, etc.) or private bodies (ecological groups, civic associations, private enterprises, etc.).

The participation of the people and the delegation of responsibility for the local defense of resources, which

Rodriguez describes as the key to the concrete inculcation of these theories in the country, is the principle which runs through the entire plan.

"According to the precepts of the new constitution (38 of which refer to the environment, and will be developed by the INDERENA), the communities will be informed of and consulted on the plans for investment in their localities." The most expeditious tool for making environmental rights effective is popular action whereby any citizen can file a complaint against anyone who is affecting the public interest. The most recent and fruitful example was the contribution made to the closing of an industrial plant belonging to the Alcalis de Colombia state enterprise which was guilty of polluting.

According to the plan, the government is committed to supporting such actions and to creating channels for the filing of charges and for making ecological contributions. To this end, the establishment of a special prosecutor's office for environmental affairs under the Office of the Attorney General and affiliated with the environmental council is being contemplated. It would have the task of receiving and investigating the charges filed by the citizenry and imposing penalties on those guilty of depredation.

Citizens' participation is a requirement of singular urgency in the environmental education plan which, with an allocation of 14.9 billion pesos, forms a part of the strategy. The shortage of environmental experts, one of the shortcomings in the proposal, must be corrected through education on the primary, secondary, and university levels, as well as informal education.

Taxes and Subsidies

Part of the financing for environmental management will come from taxes and fines imposed on polluters, according to the principle to the effect that "he who pollutes must pay." At the same time, subsidies and tax incentives will be offered to owners who undertake reforestation, preserve areas of ecological value, or invest in the replacement of old technologies with those which are environmentally "clean."

A general assessment on automobile pollution was included. Some people fear that this might mean that the modest owner of a Renault 4 would in the end be paying ecological assessments in the midst of vehicular confusion and environmental pollution for which others are chiefly responsible.

However, with the general formulation of the principle of "economic ecology," the document in question recognizes that the environment is deteriorating because the price of goods does not include the environmental cost their production entails. In imitation of other countries, an effort will be made to ensure that producers invest more in environmental controls, and that consumers direct their purchasing priorities toward goods which are less costly in environmental terms.

The detergent market provides an illustration of this concept. The production of the majority of the soaps manufactured in Colombia involves alkylate pollutants. They create a foam which travels along the rivers—the obsolete ECOPETROL [Colombian Petroleum Enterprise] plant in Barrancabermeja is an example. There are exceptions. For example, the plant manufacturing the soap called Puro uses biodegradable substances or materials easily assimilated in nature. This last product, then, is less costly from an environmental point of view, although its monetary price is equivalent to or greater than that of the others. In one section of the document, the state enterprise is ordered to discontinue this production and to substitute biodegradable detergents.

Moral exhortation has not been effective in terms of environmental protection, the administrator of the INDERENA says. "Therefore, we must become involved in the logic of the market, and we must affect people's wallets, so as to make environmental conservation profitable and to make pollution bad business."

The allocation of credit to the agricultural, industrial, and mining sectors will favor positive environmental projects, and vice versa. The corporations and the ministry will offer advice to industries and other producers about clean technologies. To this end, a Committee on Industry and the Environment, under the jurisdiction of the Ministry of Development, has already been appointed.

Twenty-three industries in Pereira, 100 in the northeastern part of Antioquia, some in Valle and Cartagena, and several tanneries in Cundinamarca are beginning to show a desire for change, with investments in excess of 200 billion to control their own pollution. This, added to the establishment of the Ecological Coffee Fund, is the first indication that the "green" cause, which is identified with utopian dreams, has the potential for achieving one of them—to narrow the gap between the ideal and the real country.

Air Pollution in Bucaramanga Described

91WN0710A Santa Fe de Bogota EL TIEMPO
in Spanish 11 Aug 91 p 13A

[Text] Bucaramanga—As a result of the high level of pollution in the northern part of Bucaramanga, one out of every three children with pulmonary disease evidences acute respiratory insufficiency (IRA), which is the leading cause of infant mortality.

Carmen Cecilia, a little girl of three who lived in the La Transición quarter, died recently as a result of the advanced bronchial asthma from which she was suffering, according to her mother, Helena Rodriguez.

She lived in one of the 35 poor quarters in the northern part of the city where the risk of environmental pollution is highest, according to a study carried out by the Santander Industrial University (UIS) and the Bucaramanga Health Institute (ISABU).

Pulmonary specialists at the Ramon Gonzalez Valencia Hospital have said that most of the patients with pulmonary diseases come from that zone. They involve children under 10 suffering from chronic catarrh, persistent coughs, asthma, and skin allergies.

Antonio, a boy of 12, has required medical assistance on four occasions this year because bronchial diseases have lowered his resistance—to the point that last week, according to his mother, Angela Chaparro, a resident of the La Esperanza quarter, he was diagnosed with bronchial blockage.

About 100,000 residents of the northeastern parts of the city are exposed to these diseases. As in the preceding cases, the first symptoms are usually serious influenza with tearing, sneezing, and high fever, which eventually becomes pulmonary emphysema, according to the studies directed by Doctor Luis Alberto Hernandez.

In the past month, the Ramon Gonzalez Valencia Hospital has treated 250 minors with pneumological ailments, 30 of them so serious, according to the scientific personnel, that hospitalization and prolonged treatment was necessary.

The conclusions reached in the study indicate that the La Esperanza, La Juventud, Kennedy, Transicion, Las Olas, Colseguros, and Cafe Madrid quarters are also high-risk areas because of the currents of polluted air blowing from a northerly direction.

In these sectors, the pollution level is as high as 201.667 micrograms per cubic millimeter. Among the elements found in the analysis carried out by the chemical laboratories at the UIS were carbonates, insoluble residues, calcium, iron, and magnesium coming from the cement plants, rice mills, and mechanical enterprises in the zone.

Despite the constant charges made concerning the saturation of the environment with polluting elements, the enterprises in question have not met the ecological control norms.

According to studies carried out by the Ministry of Health and the Institute for Development of Renewable Natural Resources (INDERENA), the processes at a cement plant which has been functioning for more than 15 years are doing serious damage to the human organism. This enterprise recently installed a special filter, but it is not capable of eliminating all of the polluting emanations, the studies indicate.

Eleven rice mills, for their part, are contributing to environmental pollution by failing to comply with the safety procedures ordered.

The director of the ISABU, Ivan Rodriguez Melo, has now announced the establishment of an air-quality monitoring network.

Monitoring Network

The administration in Bucaramanga established a monitoring network last June so as to detect sources of atmospheric pollution, to analyze the development of its components, and to establish the necessary control mechanisms.

Initially, it will have an operationing budget of 35 million pesos. The network will be made up of scientists and experts in the analysis of pollution factors.

Because of the high level of pollution, municipal authorities undertook a technical health survey in the rice-growing zone to obtain information about the methods used in producing and distributing this product.

Specialized stations will be strategically placed to form a protective cordon around the city.

DOMINICAN REPUBLIC

Sedimentation Threatens Useful Life of Tavera, Valdesia Dams

91WN0708A Santo Domingo *EL SIGLO* in Spanish
1 Aug 91 p 5-D

[Article by Marino Zapete C.]

[Text] During their short existence the reservoirs behind the Tavera and Valdesia dams have accumulated 18 and 22 meters of sediment, respectively, which has reduced their useful lives to 50 percent of the time that was estimated when they were built.

The data appears in the preliminary version of the National Report of the World Conference of the United Nations on the Environment and Development. A copy of the report was sent to this newspaper by Dr. Ivonne Garcia.

In the report it is emphasized that the difficult situation of the Dominican dams is due to a lack of foresight at the time of their construction and the absence of government programs to preserve the basins of these public works.

The report attaches major importance to the warning that Father Luis Quinn, a Catholic priest and a member of the Development Committee of San Jose de Ocoa, made recently. He warned that the useful life of the Jigüey and Aguacate dams could be insignificant if the government does not take the necessary action to preserve the basins of these villages.

In referring to the loss of soil by Dominican river basins due to a lack of adequate protection, the report to the United Nations warns that the application of drastic measures in soil use may not have the desired effects, due to the high rate of unemployment and population growth.

The report indicates that the failure to follow good conservation practices not only has caused a large quantity of sediment to be deposited in the reservoirs behind the dams but it also degrades and impoverishes soil fertility, reducing agricultural productivity significantly.

The report points out: "Productivity in irrigated areas is at a standstill, while the deterioration of agricultural soil is reaching very alarming figures. It is estimated that 52 percent of these soils show some kind of problem involving deterioration, either because of the conversion of the soil into swamp, a high level of salinity, or a loss of its structure."

Among the basic causes that have led to the deterioration of the soil, the report points to flows of irrigation water at the wrong time or in inadequate quantities; the insufficiency of irrigation and the mismanagement of the distribution networks; and the inefficiency of drainage systems.

Furthermore, the inadequate preparation of agricultural land under irrigation, the use of inefficient methods of irrigation, the lack of maintenance of irrigation systems and drainage, and the limited participation in the management of irrigation systems by farmers using irrigation are other factors.

The report to the United Nations also points out that the Tavera and Las Cuevas basins each loses 275 tons of soil per hectare per year; the Bao basin, 346; the Nizao basin, 125; the Ocoa basin, 507; the Guayubin basin, 111; and the Chacuey basin, 95.

The report also refers to the growing loss of forests every year, as well as the slow progress made in programs of reforestation. It paints a somber picture of the situation.

MEXICO

President Salinas Outlines Dolphin Protection Plans

PA2609031991 Mexico City XHTV Television Network in Spanish 0200 GMT 25 Sep 91

[Text] The Mexican Government together with industrialists in the fishing sector will make an unprecedented effort to reduce to a minimum the accidental death of dolphins during tuna fishing. Gains made by the Mexican tuna fleet over the past few years are greater than any other fleet operating in the eastern Pacific. On 24 September, President Carlos Salinas de Gortari announced the national dolphin protection program. The goal is to prove with deeds that growth and environmental protection are compatible. President Salinas announced 10 [number as heard] steps.

[Begin Salinas recording] The main purpose of today's meeting is to protect the dolphin. Our children appreciate this; so do our seas that feed them, and this is where they reproduce. I like the dolphins very much. They are intelligent and very kind to humans. Nature has designed

them to be beautiful. This is why we are going to protect our species, especially this one, which mean so much to Mexican families. To this end, I propose the following actions. They will serve to outline a code of conduct, which will serve as an example of the commitment that we all have to care for a bit of nature and our seas:

1. This week we shall publish in *DIALOGO Y CONCERTACION* an agreement that will regulate the criteria to be used by tuna boat captains, fishing technicians, crew, and Mexican tuna boat owners, as well as the appropriate measures to be used in case of noncompliance. The Fisheries Secretariat will carry out the appropriate inspections. We shall firmly enforce this new regulation.

2. I shall submit to Congress a draft proposal to strengthen the fisheries law to include jail terms for those who attack the marine ecology and protected species. There will be jail terms for those who attack dolphins.

3. I shall instruct the Fisheries Secretariat so that the entire tuna fleet—100 percent of the boats—will have observers onboard to supervise the catch and list affected species. No tuna boat will be allowed to fish without an observer onboard. We have technicians who know the technology on how to catch tuna without killing dolphins. This technology has to be applied.

4. In 1992 we shall promote an international conference on responsible fishing. We shall encourage the participation of authorities and the scientific community in order to propose the foundations for setting the rules for multilateral behavior by all nations in their respective areas for the commercial exploitation of the species and the preservation of marine ecology, not only in our seas but in all the seas around the world.

5. We shall strengthen the investigation of the country's various scientific institutions. We shall assist them with approximately 3 billion pesos—equivalent to \$1 million—so that these scientific institutions include in their programs the study of equipment and techniques that will reduce and eliminate the accidental catch of dolphins. Likewise, the federal government will supply 700 million pesos to build a natural dolphin reserve on the coast of Nayarit State to investigate the marine biology that the Mexican Cousteau Society is carrying out. It is fundamental that we encourage the assistance and participation of the country's scientific community with other countries' investigative institutions in order to increase knowledge of marine species and the best way to preserve them.

The Fisheries Secretariat is to build a live turtle museum on the Oaxaca State coast as part of the country's commitment to protect a species that the fishermen themselves help protect by virtue of the fact that the fishermen were given alternate ways to maintain their livelihood and well-being. Mexico is the turtles' most important place of reproduction.

6. Mexico complies with its international obligations. We are now members of the Convention on International Trade of Endangered Species [Convencion Sobre el Comercio Internacional de Especies en Peligro de Extincion], the CITES. As proof of our commitment and our goodwill to protect the dolphin, the Mexican Government has decided to postpone presenting to the GATT council the favorable panel resolution in connection with the tuna case. We will seek a bilateral solution favorable to both sides on the commercial measures taken due to the accidental death of dolphins when fishing for yellow fin tuna. We will protect our fishing while protecting the dolphins. [end recording]

TRINIDAD AND TOBAGO

Agreement With China Provides Assistance in Water Farming Projects

OW1909042291 Beijing XINHUA in English
0253 GMT 19 Sep 91

[Text] Bridgetown, Barbados, September 18 (XINHUA)—The Republic of Trinidad and Tobago and the People's Republic of China will cooperate in freshwater shrimps farming, bamboo-planting and weaving projects, according to a report from Port of Spain.

Under an agreement which was signed today, China will provide technical guidance and personnel training for the twin-island republic in bamboo plantation and weaving industry and freshwater shrimps farming project.

Minister of environment and national service, Lincoln Myers, and minister of agriculture, Brinsley Samaroo, and head of the Chinese technical study group, Li Shimu, signed the agreement.

Present at the signing ceremony were Chinese ambassador to the twin-island republic, Cheng Shaoling, and minister of external affairs and international trade of Trinidad and Tobago, Sahadeo Basdeo.

URUGUAY

Ministry Confirms Increasing Acid Rain Contamination of Montevideo

PY2609201491 Madrid EFE in Spanish 1531 GMT
26 Sep 91

[By Juan Antonio de Lucas]

[Excerpts] Montevideo, 26 Sep (EFE)—Uruguay's capital, which claimed to have some of the cleanest air in Latin America, is now suffering acid rain contamination levels that are causing concern among sanitary authorities.

Health Ministry sources confirmed to EFE today that the latest tests on rain water show fluctuating, but increasing, levels of contaminations.

The most recent tests show PH [acidity] levels of between 3.2 and 4.6, which are below the maximum permissible level of 5.6 on the international scale that records lower values to higher acidity levels. [passage omitted]

Probes in Melo, a town of 15,000 inhabitants, have recorded PH levels of 3—equal to that of vinegar. The contamination is attributed to the Candiota Thermal Power Plant that Brazil has built on their side of the border, just 40 km from the Uruguayan capital.

The effect on the atmosphere produces respiratory problems in humans and hinders the fattening of cattle. The contamination has forced the Brazilian environmental secretariat to suspend the project to enlarge the power plant fivefold because it would also have increased levels of contamination.

Brazil, meanwhile, refuses to install filters or establish regular controls on contaminants because this would increase the power plant operational cost to a point where it will cease to be profitable.

REGIONAL AFFAIRS

Kuwaiti Oil Well Pollution Damages Iran's Crops*91WN0709A Tehran KAYHAN INTERNATIONAL
in English 15 Aug 91 p 1*

[Text] Yasuj (Boyerahmad-Kohkiluyeh Province) Aug 14 (IRNA)—Air pollution from the burning oil wells in Kuwait which led to black greasy rains in this southern province have had adverse effects on agricultural crops, native plants and fruit trees.

"The leaves and fruits of trees around here have been unnaturally deformed as a result of the pollution, which has badly depleted the apple and pomegranate crop," an agricultural research official told IRNA Tuesday.

He lamented that fruits and buds are falling down prematurely, while flowers and leaves have taken weird shapes.

The official warning against dangers posed to human life and livestock in the coming years by columns of smoke billowing from the Kuwaiti oil wells set ablaze by retreating Iraqi Baathist troops last February, called for precautionary measures to stop the destructive effects.

Greasy rains and toxic-filled clouds have left black stains on stems of such grains as wheat and on outer walls of buildings in the province, he said.

Japanese experts who are in Iran to assess the intensity of the resulting pollution, have confirmed the severe ecological damage in the three other southern provinces of Fars, Bushehr and Khuzestan.

PALESTINIAN AFFAIRS

Drought Creates Agricultural Crisis on West Bank*91WN0680A Jerusalem AL-BAYADIR AL-SIYASI
in Arabic 27 Jul 91 pp 28-31*

[Article by Khalid 'Ammar: "Crisis Threatens Thousands of Agricultural Dunams, Foreshadows Economic and Human Crisis in Lower Jordan Valley"]

[Text] Jericho—The agricultural sector in our country faces a severe crisis that developed over the last eight years, threatening unprecedented economic and human disaster. The crisis involves increasing agricultural operating costs and a lack of open markets to absorb production. Prices have therefore dropped. Taxes and accompanying repressive measures against farmers and vegetable dealers have been imposed. Vehicles have been impounded, produce has been confiscated, and fines sometimes exceeding the value of goods have been imposed. Natural disasters have left enormous losses in their wake. In addition, farmers are experiencing difficult conditions materially and psychologically—conditions that have negatively affected all other services of daily life, since agriculture is an important

connecting link in the local economy. These factors have had an obvious and conspicuous effect on the rising unemployment rate. On the one hand, many workers have become redundant because of the decreasing agricultural area; on the other hand, other sources of income are not available.

According to registers of the Jericho Cooperative Society for Marketing Agricultural Crops, more than 1,600 officially registered farmers on the society's lists and thousands of others not registered have now, along with their families, become threatened with having to leave farming and their livelihood.

Today the water crisis heads the list of the aforementioned problems. It is a specter that threatens the coming agricultural season and the future of farming in the region.

The water crisis has become a subject of conversation for everyone, especially farmers. Some wells' flows have decreased; others have become more saline; others have dried up. Farmers are worried. Owners of wells are living in uncertainty and have made no decision about the coming season. Some will decrease the area planted; others will abstain from planting; others will rethink their plans; others will look for the best solution. Everyone is groping about aimlessly. The farmers are like drowning men grasping at straws.

Hajj Shafiq Bali, a major farmer, operates the Jawdat Sha'sha'ah farm in Jericho. He said that farming has become fraught with dangers because of the prevailing circumstances. The water crisis is one of the greatest problems threatening agriculture at present. Despite increasing expenditures to extract water using pumps that run on high-priced electricity, many wells have gone dry or have been ruined. The flow from many wells has decreased, or they have become more saline. As an example of this, Hajj Shafiq said that there used to be six wells in good operating order on the farm. Today, four are working, and two are out of commission. The flow from the four wells has decreased as follows:

- from 70 to 12 cubic meters/hour at present,
- from 35 to 15 cubic meters/hour at present,
- from 100 to 42 cubic meters/hour at present, and
- from 80 to 60 cubic meters/hour at present.

Hajj Shafiq Bali said that these wells used to irrigate over 500 dunams and support dozens of laborers and farmers. Conditions today do not permit this. There is a new plan to change the type of farming. One could rely on greenhouses to decrease the area planted and thus decrease expenses and prevent the wasting of water. Giving an example of this, Hajj Shafiq said: "Last season, one of my farmers spent 6,000 Jordanian dinars on electricity. The total yield of the farm at the end of the season was 1,500 dinars. In other words, the total yield for the season did not cover the farmer's electricity bills." Hajj Shafiq asked, "How can we continue going on this way? We don't want to go on losing. We farm in order to live, and we can't live under the shadow of these successive

losses." Hajj Shafiq is considering not embarking on the next planting season. He is thinking of not operating the wells, if conditions remain as they are.

Unprecedented Crisis

Basil al-Husayni, a large landowner and farmer in Jericho, where he plants more than 500 dunams of vegetables and bananas, believes farmers are undergoing an unprecedented crisis. Many have been led to leave the farm. He noted that more than 35 farmers had been farming for him; now there are about 15. He stated that if conditions remain as they are, it finally will lead to a serious disaster. Al-Husayni closed by saying, "The water crisis is a big problem today. Water sources have been strikingly affected for many reasons, especially the weather factor." He added that he owns three artesian wells. They used to pump 300 cubic meters/hour, but this dropped by 30 percent in recent years. Basil al-Husayni said that the water problem could be solved by digging very deep wells. This requires a permit from the authorities, something that is usually met with refusal, especially if the application is to dig to a depth exceeding 80 meters. Even if digging is allowed, it costs a lot. Digging one meter costs 400 Jordanian dinars. This requires allocating enormous budgets that farmers or the well owner cannot provide. Furthermore, the digging operation is a gamble, because one cannot be certain of the quantity or quality of the water.

Basil al-Husayni advises farmers not to plant during the first crop cycle, because it consumes large quantities of water. They should rely on rainy-season agriculture.

Al-Husayni went on to say, "The European market, which promised farmers aid, should stand beside them, especially at this time, and rescue them by providing summer assistance and solving the water and other problems." Al-Husayni called on the appropriate responsible bodies not to delay in offering the aid that will make it feasible for farmers to continue farming and guarantee sustenance to their family members. To overcome the water crisis in the next season, he suggests turning to "protected" agriculture—the use of covered houses—to save water and increase production. He said that the cost of one house for an area of one dunam is about 5,000 dinars. If only the parties interested in helping farmers would take it upon themselves to build these houses and offer them to farmers, they would contribute to rescuing what can be rescued.

There are about 116 artesian wells in the lower Jordan Valley. About 20 of them are not functioning; the rest are still working, but the quantity of water pumped has dropped markedly, and salinity has risen. Many wells need to be maintained and redug, which of course depends on official permission from the authorities. Well owners say that the authorities will not allow them to dig wells deeper than 100 meters, although the authorities themselves dig wells to a depth of about 500 meters. Well owners attribute the rising salinity to these reasons. The say that ground water in the lower Jordan Valley

depends on subterranean aquifers. The quantity of water increases the deeper one goes. Many wells in the lower Jordan Valley were dug by the Israeli authorities after 1967. These wells, which are very close to Arab wells, are operated by very big pumps—the wells near 'Ayn al-'Awja are an example. These, in recent years, have effected the water of 'Ayn al-'Awja and led to its drying up, ruining large areas of agricultural land. Also, the authorities have fixed the quantity of water that can be pumped from Palestinian-owned artesian wells. Mahmud Muslih, a large farmer in the Jericho area, said that they impose high fines on anyone who tries to draw more water than that fixed by the meters.

Muslih said, "If the appropriate parties want to help the farmers, they have to solve the water problem first. Water is the foundation of agriculture. One cannot build without a foundation." He noted that a number of well owners have taken out permits to dig new wells, but they do not have the money to pay for the digging. He cited himself as an example: "For four years I have had a permit to dig a new well 120 meters deep, but I have not yet been able to do so because the money is lacking. He wondered: "We say 'the water crisis.' Why have opportunities for providing water been exhausted?" Muslih suggested that the international community pressure the Israeli authorities to dig a deep well in the area to solve the crisis permanently. He was alluding to the fact that all the Arab wells pump from a shallow level and that this reservoir is threatened with depletion. Even if a small quantity of water can be found, it is unfit because of high salinity and chlorine.

The pumping rate for a single well in the lower Jordan Valley is about 50 cubic meters/hour. The total amount of water available in the lower Jordan Valley, including springs, wells, and artesian wells is 38 million cubic meters/year—30 million cubic meters from springs and wells, and 8 million from artesian wells.

Problem of High Salinity

'Adil [Barbaghayth], director of the Department of Agriculture in Jericho, said that water sources in the lower Jordan region are totally dependent on rain water and weather factors. He added that the crisis in recent years had come about because of these factors. Barbaghith added that artesian wells began to be dug in the early fifties, but today they face the problem of high salinity or low flow. To overcome this crisis, the director of the Department of Agriculture suggested exploiting the water that goes to waste in the winter season. It should be collected behind dams for use during the hot summer days when the crisis intensifies. This will require very large budgets. Barbaghith said that farmers must replace open dirt and cement channels with pipes to stop water loss through evaporation and seepage into the ground. The idea was seconded by Isbir al-Mukarkir, a farmer from al-'Awja.

An agricultural engineer pointed out that technical means could be used in agricultural operations to save

water. He explained that reliance on quality and reducing areas gives better results. He said that "covered agriculture" was good and gives excellent results, if the conditions for it are provided—expert supervision, superior care, and the use of modern scientific methods.

Agricultural Engineer 'Isam Adib termed "covered agriculture" too expensive. Only well-to-do farmers would be capable of it. The rate of loss would be higher than from open agriculture, if prices were low during the season. The productivity of a dunam varies from area to area—it is lower in areas of the lower Jordan Valley.

Another agricultural engineer suggested using water that results from domestic use. He said, "Because of hot weather, the inhabitants of Jericho consume large quantities of water for laundry and bathing purposes. We can use this water in agriculture after purifying it."

Modern Methods, Quality

Mansur Khalfah, director of the Jericho Cooperative Society for Marketing Agricultural Crops, advised farmers to follow modern agricultural methods and concentrate on quality in an attempt to ration water. They should take advantage of rain water and plant crops that rely on the [rainy] season. Khalfah stressed the need to exploit rain water and conserve it by building dams and basins.

About 40,000 dunams in the lower Jordan Valley are planted in vegetables, bananas, citrus, and grain, relying mainly on spring and well water. Water sources control the size of the area planted. Farmers plant three crop cycles each year. The first, which begins in mid-September and ends at the beginning of November, is called "the October crop." It needs large quantities of water because of the hot weather that accompanies its planting. The second crop, called "al-[Muhayyirah]," begins in mid-November and continues to the beginning of January. It comes in the winter season, which reduces water consumption. The third crop begins in mid-January or early February and continues until the end of April.

Most farmers now expect to omit the first crop and plant the second and third ones because of the water shortage. This view was favored by farmers Basil al-Husayni, Hajj Shafiq Bali, Mahmud Muslih, Isbir al-Mukarkir, and others.

Detailed Table of Water Sources, Lower Jordan Valley

Jericho Area Springs and Wells

- 'Ayn al-Sultan Spring—average flow for irrigation purposes about 600 cubic meters/hour
- 'Ayn Wadi al-Qilt—average flow from 200 to 250 cubic meters/hour
- 'Ayn al-Nuway'imah—average flow 200 cubic meters/hour
- 'Ayn al-Duyuk—average flow between 350 and 400 cubic meters/hour

- 'Ayn Susah/al-Duyuk—average flow 50 cubic meters/hour.

Jericho Area Artesian Wells

Owner	Working	Inoperative
1. Al-Husayni Family	4	1
2. 'Ariqat Family	1	-
3. Al-Rantisi	1	-
4. Mahmud al-Hamduni	2	-
5. Jawad al-Misri	1	-
6. Bi'r Dahiyat al-Iskan	1	-
7. Bi'r al-Awqaf	2	-
8. Bi'r Dayr Hajalah	1	-
9. Abu-Jubnah	1	-
10. Zuhdi Hashwah	1	-
11. 'Uthman al-Safafi	1	-
12. Fahmi al-Nahhas	2	-
13. Karmilu Nassar	-	1
14. Talib and Sabri Makki	1	-
15. Abu-Hudud	-	1
16. Muhammad 'Alyan	-	1
17. Salah al-'Arurah (formerly Rashid Hijazi)	1	-
18. Musa Nassar	1	-
19. Sulayman al-Barham	1	-
20. Jamil Sabri Khalaf and Faysal Usa'yid	1	1
21. Antun Nazzal/Khalil al-Shamali	1	-
22. 'Awni Hijazi	2	2
23. Jawdat Sha'sha'ah (supervision of Hajj Shafiq Bali)	4	2
24. Arab Construction Project	11	-
25. Sa'id 'Ala'-al-Din	1	-
26. Muhammad al-Misri	1	-
27. Husayn Shahwan	-	1
28. Bi'r al-Dajjani/al-Nuway'imah	-	1
Total	43	11

Al-'Awja Springs

'Ayn al-'Awja, with a flow of 800 cubic meters/hour. The spring depends primarily on rain water, especially water flowing from mountainous areas and hills. The continuity of its flow therefore depends on the amount of rain in the rainy season. Recently, the spring has begun to dry up early because of deficient water sources and because the Israeli authorities have dug several deep wells near the springhead. This has effected the water level to some extent. Many experts and farmers have confirmed this.

One of these wells is no more than 300 meters away from the springhead and has a depth of hundreds of meters.

Al-'Awja Artesian Wells

All are operative. Their owners are: Jawad al-Dawudi (1), Sabir al-Mukarkir (1), Sulayman al-Mukarkir (1), Subhi al-Dajjani (1), Hasan al-'Amd (1), 'Abd-al-Mu'ti al-Quthb (2), 'Abd-al-Karim al-Nujum (1), the Nusaybah family (1). There are a total of 9 wells.

Al-Jiftlik Springs

The 'Ayn al-Fari'ah project consists of a series of springs with overall water flow of about 600 cubic meters/hour. Among the most important springs feeding the project is 'Ayn Shibli, but there are other springs. Three phases of the project, which pumps water through metal pipes for conservation, have been completed.

Al-Jiftlik Artesian Wells

There are 26 wells, three of them out of operation; their owners are: al-Ma'shar Project/Engineers' Association (2, with 1 inoperative well), Nawwaf al-Damin (1), Burhan al-Damin (2), Sa'd and Shahir al-Damin (1), 'Ali 'Abdallah al-Damin (1), Adham al-Damin (1), Dr. Zahi al-Qamhawi (1), Ma'ruf Abu Samrah (1), Mutalliq al-Duray'i (1), al-Fari'ah Agricultural Station (1, with 1 inoperative well), 'Inad al-misri (1), Wahid al-misri (1), Hamdi Kan'an (1 inoperative well), 'Issa al-Sammadi (1), Abu Shamt (1), Diya' 'Abduh and Safi al-Ghazzawi (1), Fathallah al-misri (1), Mahmud al-'Allan (2), 'Awwad al-[Su'ayidah] (1), and Jawad al-Misri (1).

Al-Fasayil

[The only spring is] 'Ayn al-Fasayil, with a flow of 50-60 cubic meters/hour, and there is one Artesian well owned by Salham al-Nimr.

Al-[Zubaydat]

Al-Zubaydat has five artesian wells, all operating, owned by the following (one well per owner): Jamil Khamis, Sulayman al-Salih, Badi' Yunus, Bi'r Abu Jarrar, and the al-Zubaydat public well.

'Ayn al-Bayda Artesian Wells

There are three wells, all operational, owned by Muhammad 'Abd-Khudrah, Ahmad al-Fuqaha', and the al-Zu'bi well.

'Ayn al-Bayda Springs

Several exist, with a total flow of about 300 cubic meters/hour. The most important are Upper and Lower 'Ayn al-Shamsiyah, 'Ayn al-Bayda, 'Ayn al-Muhaydiriyat, 'Ayn al-Dayr, 'Ayn Bulaybil, and 'Ayn Qur'an.

'Ayn Kardalah

'Ayn Kardalah has a flow of eight cubic meters/hour.

Furush Bayt Dajan

Furush Bayt Dajan relies on a total of eight artesian wells, four of which are operating. They belong to Nash'at al-Misri, Hafiz al-Shak'ah, Tawfiq 'Abd-al-Jalil, Yusuf Shahin, and Hasan al-'Ubaysi. The four wells not operating belong to Samir 'Abd-al-Jalil, Tawfiq al-Yaziji, and the Tammun public well.

Marj Na'jah

There are two public wells for the area, both operating.

Khuzuq Musa

There are two wells belonging to Sulayman al-Salih, one not operating.

Bardalah

Bardalah has four working wells belonging (one well per owner) to Muhammad Nimr al-Hasan, Sa'id al-Mansur, the al-Qifaf well, and the Bardalah public well, which yields 180 cubic meters/hour.

Conclusion

A total of about 40,000 dunams of land in the lower Jordan Valley are planted with vegetables, grain, citrus, and bananas using water from springs, wells, and artesian wells. Water resources control the expansion or contraction of the cultivated area. Hundreds of thousands of dunams in the occupied territories are not farmed because insufficient water is available. The farmed area now threatens to decrease if the water shortage crisis continues to worsen. As a result, thousands of Palestinian families who support themselves from this sector will be deprived of a living and join the ranks of the unemployed. Other economic sectors will also be affected, as they are directly linked to agriculture.

If the situation remains unchanged, it will constitute a dangerous sign of an impending disaster more human than economic. My belief is that the water crisis will become more and more serious. It has indeed become a regional crisis, with water becoming more valuable than oil. The realities indicate that the next war—God forbid—will be a war for water.

For as God has said: "We made every living thing from water" [Koran 21:30].

INDIA

Guidelines Banning Mountain, Hill Tree Felling Issued to State Governments

91WN0704A Madras THE HINDU in English
24 Jul 91 p 7

[Text] New Delhi, July 23—The Centre has issued guidelines for banning felling of trees 1,000 metres above the sea level.

According to an official document the guidelines have been issued by the Environment and Forest Ministry to State Governments/Union Territories banning green felling on mountains and hills.

This has been done because trees play a vital role in purification of air by absorbing carbon dioxide and releasing oxygen. Felling of trees, therefore affects the environment adversely.

Since lops and tops of trees are used as fuelwood there is no precise estimate with the Government of the forest cover being depleted every year because of this. The other measures taken to check depletion include assistance to States/Union Territories for development of an infrastructure for protection of forests from biotic interference and enactment of the Forest Conservation Act to check diversion of forest land to nonforestry purposes.

Afforestation programmes: The Ministry has introduced programmes of afforestation under the State plans and Centrally-sponsored schemes including plantations.

The Ministry has received 4,482 proposals from States/Union Territories seeking forestry clearance for various departmental projects. Of these 2,291 have been approved. The Ministry rejected 655 proposals on merit and another 1,213 for nonfurnishing of essential details by the States/Union Territories.

There are 213 proposals pending clearance in the Ministry and 110 proposals have been withdrawn by the States/Union Territories.

Of the pending cases only two are waiting clearance for over six months according to Ministry officials. These two projects relate to diversion of 177.47 hectares of forest land in Kurnool district of Andhra Pradesh for Srisaillam right bank canal and erection of tower Sillem to Bommerru 220 kV transmission line using 100.26 hectares of forest land in Khammam and East Godavari districts.

The maximum number of projects—1,009 have been received from Uttar Pradesh and of them 732 approved. The Ministry did not approve 74 projects and 175 projects were rejected for nonfurnishing of information. While the State Government withdrew 11 projects, 17 are pending clearance.

Chandigarh furnished one project and it was approved but the one submitted by Delhi was rejected for nonfurnishing of information, official documents show.—PTI

Environment Minister Comments on Nation's Industrial Policy

91WN0719A Calcutta THE TELEGRAPH in English
4 Aug 91 p 11

[Interview with Kamal Nath, minister of state for environment and forests, by Seema Paul—date and place not given]

[Text] [Question] As minister for environment and forests, what is your reaction to the new industrial policy?

[Nath] Industrial policy has very clearly spelt out that environmental considerations shall be of prime importance, both in the prologue and in the policy itself. I was party to the Cabinet meeting that decided on the industrial policy. The industries may not need other licenses from the government, but they certainly would continue to need the environmental clearance from us. That increases our responsibility.

[Question] Obviously some new measures would be required to meet the added responsibility. Have you made up your mind on what these could be?

[Nath] We are in the process of strengthening our impact assessment committee and we would be delegating a lot of responsibility to the State Pollution Control Board. I hope they will play the right kind of role. Anyway, this is a concurrent subject and we can step in any time we want.

[Question] What is your view on big dams? Two of them—Tehri and the SSP-Narmada Sagar—have been quite controversial in recent years.

[Nath] I am studying these two specific dams. We have to see that the objective of the dams, which is irrigation and power generation, both yield the kind of results that they are meant to. We can't have irrigation for the sake of irrigation. It must necessarily be for good land and degraded agricultural land does not deserve and should not get irrigation facilities.

[Question] Are you referring to the Narmada Sagar dam?

[Nath] This is a generality and if it applies to Narmada Sagar, well, it applies.

[Question] What specifically is being done by the Ministry on the Narmada dam.

[Nath] Well, I am looking into it. I am looking to see whether it needs to be examined. I have had some discussions with Baba Amte, the local political leadership there, the people who are going to be affected. I now have to hold discussions with the technocrats. This will be done in a fortnight and I will then know how much deeper I should go into the matter.

[Question] Have you discussed the matter at all with the water resources minister, Mr. V.C. Shukla, who as member of the Opposition had advocated lowering of the dam's height in order to reduce the submergence zone?

[Nath] No, not yet. But I would be doing it after I have discussed the matter with technocrats.

[Question] Any moves on Tehri?

[Nath] I have no moves. The problem is that the Tehri authorities have made no moves. They should have

complied with the conditions in their approval and they have not done so. We have asked them to fulfill these.

[Question] Do these relate to the basic dam design, which the seismologists and the environmentalists have been faulting?

[Nath] No, I have no problem with the dam design. These conditions relate to rehabilitation of the people and other similar matters.

[Question] Environmentalists have pointed that the Tehri dam never really got the environmental considerations it should have got and the government, in its hurry to get Soviet aid in view of the impending visit of President Mikhail Gorbachev, had virtually forced a one-line clearance from the then minister.

[Nath] My objections are not to the basic design but relate to the rehabilitation aspect.

[Question] Soon after assuming charge, you announced that there would be a scheme for voluntary disclosures from errant industries. What has been the response from the industry?

[Nath] That scheme is being formulated in the ministry. The industry has welcomed it because it wants to be environment conscious. I have already started holding meetings with industrial chambers and they are positive about it.

[Question] The second pronouncement related to the setting up of environmental tribunals. At what stage is it? how is it different from the scheme mooted by Mrs. Maneka Gandhi?

[Nath] The scheme will be announced soon. It has obtained all the clearances. The tribunals will take up cases relating to hazardous substances and for compensatory claims. Why bring in Maneka Gandhi? I do not know about her scheme.

[Question] You mean you didn't have a look at what she had formulated?

[Nath] Well, I went through with what I wanted to do. I don't know what was in her mind!

[Question] The environment budget has been increased. What are the specific areas you think need to be given priority?

[Nath] I think vehicular pollution in major metropolitan cities needs to be looked at more carefully. Another area is industrial expansion and industrial location in highly-populated areas. I also wish to increase forest cover by at least one percent every year. I hope it will be an achievable target. There will be greater schemes of involving the community, aerial seeding, providing them with funds, greater checks. I will make it a people's movement.

[Question] The Brazil Conference next year is billed to be the biggest international event on the environmental front. What will be India's role?

[Nath] We would like to see a large number of NGOs participate in it. I am going to encourage NGOs to go there. I propose holding an NGOs' conference to get all the NGOs together. Our stand is contained in the Beijing Declaration to which 41 developing countries were signatories.

[Question] Our agreeing to sign the Montreal Protocol is being seen by environmentalists here as weakening of our stance, especially as leaders of the developing world. What are your views on the role India should play in international environmental negotiations, which are increasingly becoming more and more important on the world agenda?

[Nath] We have got to take the view that western countries are the real culprits as far as the environment is concerned. They must pay for the exploitation, with interest.

[Question] One last question. Have you changed in any way since you took up this portfolio?

[Nath] Well, I was always environment-conscious. I have, of course, given up smoking after I took up my new charge... I know your next question. I assure you I don't smoke in the bathroom.

Andhra Pradesh Industries Warned on Pollution *91WN0720A Secunderabad DECCAN CHRONICLE in English 5 Aug 91*

[Article by S. Ram Murthy: "Industrial Units Warned"]

[Text] Hyderabad, 4 August—The Andhra Pradesh Pollution Control Board has issued a stern warning to 450 major and medium industries, including Central and State public sector undertakings, to establish and operate effluent treatment plants in their units before December this year.

The Board has issued the warning in accordance with the Centre's directive. About nine months ago, the Central Government had sent a fiat to all the States to accord priority to pollution hazards by disposing of industrial wastes into treatment plants.

The Centre has identified 17 categories of industries—highly potential for letting out industrial effluents—and instructed them to establish their effluent treatment plants before the year-end. Some of the units which cannot afford to build their own effluent plants, were given the choice to let their wastes into common treatment plants being proposed by the Board in various industrial zones.

The 17 categories are cement, thermal power plants, iron and steel, fertilisers, zinc smelter, copper smelter, aluminum smelter, oil refinery, pulp and paper, basic drugs,

dyes and dye intermediate, pesticide manufacturing, petrochemicals, cluster of tanneries, pharmaceuticals, sugar and distilleries. About 450 major and medium, including sizable number of public sector, both Centre and State-owned, fall under this 17 categories besides hundreds of small-scale industries.

Though the Pollution Board after receiving the Centre's directive dashed off letters to various industries, the progress made so far with regard to setting up of plants has been quite tardy in the State. Hence the Board has issued a stern warning recently to all the industries to complete their treatment plants before December giving them ample time.

Mr. S.V. Rao, member secretary of the Andhra Pradesh Pollution Control Board officials had inspected a number of industries to review the progress made for the completion of the treatment plants before the deadline. It was found that many industries have not even started their work and it would be impossible for them to complete and operate the treatment plants which normally takes six months to one year.

Ironically they include a number of major industries including the reputed ones and public sector undertakings.

Asked what action would be initiated by the government against them if they did not fulfill the directive of the Centre, Mr. Rao said that the Centre was working out the details.

Mr. Rao said that the Board on its part had identified seven industrial belts in the city and around for setting up common treatment plants. The expenditure of treatment plants which costs crores of Rupees is met by the Central, State and the concerned units. While the Centre and the State contribute 50 percent of the funds, the remaining 50 percent has to be shared by local units sending out wastes.

Mr. Rao said of the seven plants, the Jeedimetla common treatment plant has come into operation last year at a cost of Rs. 3.5 crores. He said that though the treatment has started working, many industrial units were still flouting the instructions by letting out the effluents outside, instead of letting them into the treatment plants. They were resorting to this method despite the presence of a common plant.

The member secretary said that the work for the Nacharam common treatment plant has begun. Nacharam is the oldest and the biggest industrial area badly affected by pollution. In fact, most of the areas of the belt do not attract new housing colonies because the water collected from borewells here is unfit for drinking consumption.

The Board has proposed similar units at Pasha Mailaram, a few km from the biggest industrial belt. Pattancheru, the treatment plant which would cost Rs. 6 crores would cater to the needs of Pattancheru belt which

flushes out highly toxic material. The Nonresident industrial zone set up at Bolarum on the way to Sangareddy would have a common treatment plant at a cost of Rs. 3 crores. The Mallapur chemical industrial belt would be equipped with Rs. 2-crore plant, while Bonthapalli industrial zone would also have a similar plant costing Rs. 3 crores.

Mr. Rao lamented that many industrialists were not coming forward to solve the pollution hazards which have a direct bearing on human health despite several concessions offered by the government for setting up common and individual treatment plants.

While a hue and cry is being raised over pollution all over the country, not a single health study has been conducted so far by any organisation suggesting the cause and effects.

The Pollution Control Board with the help of some voluntary organisations is making a sincere endeavour in this regard.

The Board has sent a proposal for conducting health studies in the Pattancheru area and later in the Jeedimetla area.

Unless some stringent measures are taken, who knows, Hyderabad may become another Bhopal.

Government Ignores Health Problems From Tarapur Nuclear Reactor Leak

*BK2309101691 Melbourne Radio Australia in English
0800 GMT 23 Sep 91*

[Text] In northern India, there is an increasing evidence of a nuclear disaster. [Begin recording] We have seen children who were born without their hands, without or deformed legs, without ears, or many...more than one finger [phrase as heard], and so forth. So, these deformities are definitely found in that area. [end recording]

An Indian nuclear expert explaining the horrendous birth defects allegedly caused by the Tarapur nuclear reactor in the northern state of Rajasthan. But despite the situation, the Indian Government is refusing to investigate claims of genetic damage—claims being made by tens of thousands of villagers.

The power plant, known as RAPS 1 [Rajasthan Atomic Power Station] is based on a Canadian design, and although a similar plant in Canada has been closed, not

so in India. Despite shutting down the plant on 250 occasions in 10 years, the power station is still operating and still leaking.

South Asian correspondent, Christopher Kramer, just visited the reactor site where a volunteer team of doctors is making the first comprehensive health survey of the region.

[Begin recording] [Unidentified interpreter with Indian accent] He says his name is Dinesh.

[Kramer] How old is he?

[Unidentified interpreter] Ten years. He is suffering from a disease, and his genital organs are missing, and he suffering from urinal disease. The stem for passing urine is missing.

[Kramer] In the villages around the RAPS plant a parade is in progress for the visiting Australians. Men with horrible lesions on their skins, children without hands and penises. The old men of Jajani village say such things were rare in their experience before thousands of hectares of land were acquired in the 1960's to build an atomic power and heavy water plant.

Balu is a farmer of the Bhil caste who claims his family and livelihood have been destroyed over the years by radiation from RAPS.

[Unidentified interpreter] Out of 75 goats he owned, 70 have been dead. Here, he was married twice and both of his wives died, and he had a child, two-three years of age, and he also died due to the disease.

[Kramer] Whether from the water they drink or from the air which blows 25 days a month from the direction of the plant, the illiterate villagers of the Kota District sensed their bodies being contaminated. Tales of lethargy, nausea, and sexual impotency are common.

Professor Dharendra Sharma of Nehru University in New Dehli says the problems are reminiscent of those experienced at the Soviet nuclear power station at Chernobyl.

[Sharma] ... let an impartial, independent inquiry to be conducted to establish the relation between genetic deformities and the radiation leak in that area, where the high number of genetic deformities are found.

[Kramer] All information relating to India's nuclear program is classified by the government. Nevertheless, information available on the public record paints a chilling picture of sloppiness and insensitivity. In the first 10 years of its operations, RAPS 1 was shut down at least 250 times. In 1985, hairline cracks began appearing in the southern end shield of the reactor core leading to leaks of highly radioactive coolant.

The authorities spent two years and more than \$100 million trying unsuccessfully to fix the problem, and since then the reactor has limped along at less than half the capacity.

An identical reactor built in Canada at the same time as RAPS was shut down in 1986 where authorities judged that fixing it would cause more than the electricity it might produce. But in power-starved India, the government wants RAPS to keep producing whatever electricity it can in utmost secrecy.

Not content with that, a volunteer team of doctors has spent the past fortnight conducting a health survey within a radius of 10 km of the plant. The indications so far are that when their data is analyzed, the Indian authorities, already under pressure for failing to sign the Nuclear Nonproliferation Treaty, will have some explaining to do about why a radiation threat to the genetic makeup of their own people was not worth investigating. [end recording]

Government Opposes Global Convention on Forestry

*BK2809161691 Delhi All India Radio Network
in English 1530 GMT 28 Sep 91*

[Text] India has opposed any move for a global convention on forestry, saying that regulations will be counter-productive. The minister of state for environment and forest, Mr. Kamal Nath, told newsmen in New Delhi today that international control on natural resources will impinge on the sovereign rights of a country. He said developing countries like India have their own legal and institutional arrangements to control the loss of forests and their efforts to increase the green cover should be encouraged through financial and technical cooperation.

Mr. Kamal Nath also said India will not avail itself of any assistance from the \$200 billion World Environment Facility which was set up a year ago.

IRAN

Tehran Air Pollution Worsening; Lack of Effective Measures Cited

*91WN0709B Tehran KAYHAN INTERNATIONAL
in English 18 Aug 91 p 2*

[Text] How will the inhabitants of the city of Tehran look like a few years from now? In all probability, like creatures from a science fiction movie, goggles, gas masks, and all!

Over the past years, Tehran has consistently made it to the list of the most polluted cities of the world, together with Tokyo and Mexico. The proportions of the air poisoning indicate that the situation is very bad. Recent figures from the Environmental Protection Agency

showed hydrocarbons up by 17 times, nitrogen oxides by 13 times, carbon monoxide gas and smoke three times over the standard levels.

The most obvious culprit are the 1.6m motor vehicles congesting the city routes and burning up 7.5m liters of gas daily, which amounts to one-third of total national consumption. Nevertheless, the blame on the further deterioration of the environment should rightfully be on the residents: the government and the governed alike.

The public has not been vigilant and was primarily after short-term comfort and convenience. No group is actively lobbying for environmental protection and hardly any pressure is exerted on the government to be more concerned with this issue.

City officials, in turn, have never seriously addressed the problem and its effects on the general well-being of the population. There are virtually no laws regulating waste disposal and emissions into the atmosphere. Government programs do not undergo scrutiny to take into account the full range of social, economic, and environmental repercussions on this and future generations.

Whatever has been done was merely paying lip service to environmental considerations. Limiting private vehicles to specific hours of the day is not even due to concern for air pollution but for traffic congestion. Smoke belchers aren't fined or apprehended; maintenance requirements to keep vehicles in good running condition are nonexistent. In fact the government operates one of the city's worst polluters—the public transport facilities. In other countries, the trend is on the production and/or conversion of vehicles to be more environment-friendly; no such measures are being considered here in the near future.

While it is acknowledged that the government has limited resources to juggle among varied and competing priorities, it is an imperative to invest in the health of the citizens. The environment need not be a victim of industrial growth. It is wrong to assume that some degree of ecological degradation is a price to be paid for economic growth.

Efforts towards better city planning, zoning, cleanliness and beautification are all futile if the air the people breathe is toxic. A lethargic, sick, chronically coughing, and watery-eyed population cannot appreciate the parks, well-aligned streets and shiny buildings.

Some 2,600 years ago, Hypocrates, the Greek physician, already maintained that human health and well-being are associated with a desirable state of equilibrium between people and their surroundings. It is now about time that health and cleanliness gain a prominent place on the political agenda. After all, one of the fundamental rights of every human being is the right to health.

Germany To Help Iran Combat Environmental Pollution

91ASI436Z Tehran KAYHAN INTERNATIONAL
in English 25 Aug 91 p 1

[Unsigned report: "Germany To Help Iran Curb Environmental Pollution"]

[Text] Bonn, Aug 24 (IRNA)—Germany will assist Iran in combating environmental pollution caused by the Iraqi chemical bombing of the Iranian cities during the 1980-88 Iraq-Iran war and also the burning Kuwaiti oil wells.

This was agreed between head of Iran's Environment Protection Organization (IEPO) Hadi Manafi at the end of his five-day visit to Bonn and Germany's minister for the environment, conservation and reactor safety Klaus Kopfer.

Manafi who returned home Friday night, visited Germany at the invitation of Kopfer to follow up talks held in Tehran in March.

A protocol was signed between Manafi and Kopfer at the end of the visit in which the two sides stressed the need for international efforts to enforce environmental protection measures.

The German side agreed to help Iran in measuring toxic substances polluting the air, water and soil. The details will be spelled out in an agreement to be signed in Tehran next month.

Germany also announced readiness to help Iran remove the pollutions caused by the Persian Gulf war. Furthermore, Bonn is to examine Iran's proposals regarding ways of countering air pollution in the capital of Tehran, establishing centers for measuring pollution in five major rivers in Iran and methods for safe disposal of hospital wastes.

The draft of a memorandum on Tehran-Bonn environmental cooperation was prepared during the visit which is to be signed by the two sides in Tehran soon.

Oil Spill Said To Spark Anti-Regime Protest

NC2709185991 (Clandestine) Iran's Flag of Freedom
Radio in Persian 0330 GMT 27 Sep 91

[Text] The fishermen and people of Nowshahr marched 24 September to protest the pollution of seawater by the seepage of millions of liters of gas oil. According to reports, the Soviet ship Antonio hit a breakwater shelf the morning of 24 September on the coast of Nowshahr. Nearly 5 million liters of gas oil spilled into the sea through a hole in the ship's gas oil cistern and millions of fish washed up on the Nowshahr shore covered with oil.

The fishermen were joined by a large number of people and staged a protest march in the city streets and congregated outside the government building, shouting slogans against the Islamic Republic of Iran and harshly

worded slogans against Hashemi-Rafsanjani and Khamene'i. They were attacked by the regime's Guards, and it has been reported that the unrest in Nowshahr continued until the afternoon.

KUWAIT

Paper Urges Government Not To Conceal Pollution Information

*LD2509142891 London KUNA in Arabic 1110 GMT
25 Sep 91*

[Text] Kuwait, 25 Sep (KUNA)— The AL-QABAS daily has called on the Kuwaiti Government immediately to tackle the problem of pollution, from which Kuwaiti has been suffering since "the tyrant of Baghdad unleashed his hatred toward nature and the people, so that it may avert a policy of concealing information which only helps to spread suspicion, apprehension, and fear."

In its leading article today the paper said the people can stand the catastrophe in Kuwait, despite their daily suffering from inhaling polluted air and their awareness of the danger of its poisonous contents to their health and the health of their families, because they are certain that they will triumph over the catastrophe and Kuwait will be clean again.

The paper pointed out that the government's method of dealing with this catastrophe and its concealment of information constitute an unjustifiable method and policy which will have grave negative consequences, regardless of the motives.

The paper said the policy of concealing information except from a few officials or those directly concerned helps the spread of suspicion, apprehension, and fear.

AL-QABAS stressed that it is the interests of all to make the correct information continuously available about the development of the situation so as to keep the crime committed by the Iraqi regime present before the entire world. In this way the conscience of the world is kept aware of the urgent necessity to put the criminal on trial. Knowing the extent of the catastrophe and its elements is a fundamental prerequisite for defining the type of prevention, the paper added. It called on the Kuwaiti

Government and people to cooperate to define preventive measures against pollution and to abide by them, so as to emerge from the ordeal with the minimum damage.

AL-QABAS suggested to the government that it should organize a weekly news conference by one of the officials concerned to inform the people of the details of the situation and to make them aware of what is required of them.

SUDAN

Government Seeks To Adhere to World Ivory Regulations

*AB2809175091 Omdurman Sudan Broadcasting Service
Network in Arabic 1930 GMT 27 Sep 91*

[Text] Colonel Kamil Ibrahim Abd-al-Rahim, director general of the game rangers' forces, has issued a statement on [words indistinct], asking all the citizens dealing in elephant tusks—namely exporters, traders, craftsmen, and general citizens—to contact the headquarters of the game rangers' forces in Khartoum, bringing written ivory inventories to them no later than 15 October, so that they may be stamped with new stamps [words indistinct], which were made in accordance with specifications of the international organization for regulating the world trade in land animals and plants threatened by extinction, and so that quantities and their weights may be listed so that the information can be sent before the end of October to the organization to obtain an exceptional export quota (?because) the organization will not accept any requests after the end of October.

The statement affirmed the commitment of the game rangers' forces and their keenness to implement all the international agreements and commitments regarding this sphere and to which Sudan is party. The game rangers' forces are also preparing to participate in the donors' conference to support programs for the protection of the elephant in Africa, which will be held in November in [place indistinct].

Moreover, all the citizens dealing in ivory are expected to fully cooperate with game rangers' forces because any undeclared quantities that are not stamped will not be regarded as legal and will be liable to confiscation by the end of October.

Those living in the states are requested to contact the headquarters of the game rangers' forces in the various capitals before the specified date.

Atlas for Forecasting Natural Disasters Planned
91WN0718B Moscow DELOVOY MIR in Russian
10 Aug 91 p 12

[Interview with Professor Sergey Myagkov, coordinating council chairman, conducted by DELOVOY MIR correspondent Aleksandr Yuryev: "An Atlas of Catastrophes"]

[Text] **The Coordinating Council on Unfavorable and Dangerous Natural Phenomena and Protection Against Them** recently held an all-union meeting. Specialists tried to evaluate what natural disasters threaten USSR territory in the next few years and decades, whether they will become the "fuse" for technological catastrophes, and if so—where and when. And whether it is possible, if only partially, to reduce the scope of the losses. Our correspondent Aleksandr Yuryev met with the chairman of the coordinating council, Professor Sergey Myagkov.

[Myagkov] I cannot name exact figures, because they are confidential. However, the general evaluation is such: The loss from natural surprises and technogenic accidents in our country is huge, admits Sergey Mikhaylovich. In the 80's, approximately one-third of all industrial catastrophes in the world occurred in the USSR. And this, alas, is not the limit. The sum of factors—from widespread obsolescence of technological equipment to constantly growing resistance to the environment (after all, we are going into ever more remote and inaccessible regions)—works against us. Thus, there are the coming changes in climate, which certainly do not facilitate ecological stability.

[Correspondent] Quite a perspective! I makes one not want to live...

[Myagkov] Nevertheless, live we must. We must adapt to the conditions which we have created for ourselves. Therefore we, i.e., the members of the coordinating council, and our colleagues are proposing that a detailed atlas be compiled for the entire USSR territory, showing the dangers and natural disasters which await us. This atlas may be used to predict the scenarios of possible catastrophes: Visual, vivid descriptions with whose aid the specialists in industrial safety and civil defense could professionally prepare for the consequences. In other words, to "superimpose the outlines"—to combine the violence of nature (earthquakes, hurricanes, floods, avalanches) with the peculiarities of a specific territory. You yourself understand that a little candle factory in the region of a cataclysm is one thing, but a military facility with an unpredictable content is something else entirely. From here come the schemes for location of industrial and household buildings, the necessary number of rescue services and strategic provisions.

Then again, natural disasters such as earthquakes and floods are flowers as compared with that which awaits us in connection with the global warming of the climate which will begin quite soon.

[Correspondent] Many scientists believe that it will not begin...

[Myagkov] That is what some of our country's scientists believe, who have been raised on plan economics and plan economic management. They are sure that nature develops according to a pre-ordained schedule. In their opinion, there are no specific prerequisites for warming of the climate.

There are! This is the position held by researchers throughout the world, and there are also many of them in our country. According to general evaluations, the Earth's climate will begin to change in the direction of warming in three decades. Preparations for this inevitable process are in full swing abroad. The Americans, for example, are allocating millions of dollars for a national climatic program. And we are the ones who should really worry, primarily—the Siberian region. Because Siberia will become the record holder in the program of natural variations caused by the warming. Following these, technological variations will begin.

[Correspondent] What types of catastrophes are you predicting there?

[Myagkov] Architectural-constructional, if we may call them this. Almost everything in Siberia is built on permafrost. Piling foundations are sunk into the permafrost and are held only by it.

According to general notions, the average annual temperature in the Transbaykal region will rise by two-three degrees, and in the northern Siberia—by four-six degrees. In 20-40 years there will be full degradation of the permafrost, and it will be retained only in Taymyr. The layer of permafrost into which the foundation pilings have been sunk will melt in two decades.

[Correspondent] So it turns out, the Siberian cities will start to float?

[Myagkov] They will float! They will slip away. The traditional Siberian winter roads will also become soggy along with them.

Then the forests will begin to perish. They will not have time to spread to the North Atlantic Ocean. Transplant them? By that time we will have a heap of other problems which we risk drowning in.

[Correspondent] We run this risk if we do not arm ourselves with reliable scenarios of all the possible climatic changes?

[Myagkov] Believe me, I do not intend to tug the blanket onto myself in demanding that our work be given unquestioned priority. There are many other problems which are also very important and current. However, I have outlined for you the Siberian perspective. In my opinion, it is obvious and convincing. We can also expect a great drought in the Ukraine and in Kazakhstan—also in our near future.

[Correspondent] Sergey Mikhaylovich, this is the first I am hearing of such a menacing perspective. I believe most of our readers also do not know anything about it. It seems that a small circle of specialists is engaged in it, and only they are worried about it...

[Myagkov] You are close to the truth. It is true, about two years ago there was a USSR Council of Ministers program which appeared, dealing with the continued development of the country under conditions of a changing climate. It appeared—and then suddenly disappeared somewhere. Did they make it confidential? That is too bad! The maximum number of specialists should be involved in it. Leaders of republics and local Soviets, industrialists and urban developers should be acquainted with its content. Who knows, perhaps at this very moment a decision is being made somewhere about the construction of some facility which for well-known reasons will begin to float in 30 years! Yet the people making the decision do not even have a clue about all this.

In striving to compensate for the absence of necessary information, as well as for the clear absence of work in this direction, our Coordinating Committee on Unfavorable and Dangerous Natural Phenomena and Protection Against Them is preparing an atlas of natural disasters through its own efforts. It will deal with three conditions of the climate: The current one, the one at the beginning of global warming (approximately the year 2020) and the one at the end of it (2050). Here we will take into consideration all categories of losses, as well as the specifics of natural cataclysms: They are divided into destructive and exhausting. In general, every administrative-management region will receive over 100 maps. We will complete compilation of the atlas in five years. Then it will have to be published. This is a matter for the Cartography Main Administration. But in any case, the country must have such an atlas by the end of the 90's. Later will be too late.

Ecological Fund Founder Describes Organization's Activities

91WN0718A Moscow DELOVOY MIR in Russian
10 Aug 91 p 12

[Interview with Professor E. Girusov, co-chairman of the USSR Ecology Fund and doctor of philosophical sciences, conducted by DELOVOY MIR correspondent Yelena Druzhinina: "Will We Turn the Planet Into a Star?..."

[Text] Mankind is living with an incorrect purpose: Hundreds of years of civilization are being built not on the union with nature, but on the struggle with it. "Sometimes it seems to me that in the image of man we have a piece of enraged matter, which has taken on the goal of destroying itself," muses Professor E. Girusov, doctor of philosophical sciences and co-chairman of the USSR Ecology Fund. Our correspondent met with him.

[Correspondent] Eduard Vladimirovich, isn't your attitude a bit too gloomy for the head of an ecological organization? Pessimism is perhaps not the best helper in a matter...

[Girusov] I have been working on ecological problems for over 30 years now. Therefore, I have the right to consider myself not a pessimist, but rather an informed realist. The state of the ecology today is such that it gives no cause for maintaining a good attitude. The main misfortune, in my opinion, is that people have not developed an instinct for the danger in upsetting the ecological balance. We do not understand that we cannot bring nature to an extreme degree of exhaustion. After all, from here on it will begin to disintegrate already without our participation. This is what we, specifically, are observing today.

Lately I have been tormented by some ecological nightmares. What is happening? People extract huge quantities of various substances from the earth with maniacal persistence. These excavations are doubling every 8-10 years. The waste products from processing raw materials and the energy expended both for extraction and for processing are also doubling accordingly. There is a certain greedy progression which will ultimately crush mankind. And there is only one way to survive under this pressure. We must change the paradigm of life and scientific knowledge.

[Correspondent] This is what the USSR Ecology Fund was created for? They say it was your idea. What does it do that is constructive for the ecology?

[Girusov] Two-and-a-half years ago, already after the emergence of the USSR Goskompriroda [State Committee for Environmental Protection] (which did not make us very happy), I proposed to those who think as I do—representatives of various sciences—to create an Ecology Fund in the country. I was supported in this matter. And thus, the birth of an independent public organization took place. Under the word "fund" we understand not only monetary funds, which is obvious, but also a community of intellectual forces.

Environmental protection is not simply the most important cause, to which we must directly summon everyone. Life shows that appeals and agitation do not yield results. Nature must be protected not out of duty to service, and not even out of common sense, but at the call of instinct, which we have stopped heeding. Yet for this, there must be a turnover in the consciousness of the people, a reappraisal of values. Of course, we cannot achieve progress without ecological education. And we would like to create a certain standard of it in the fund. Moreover, we must rid the adult population of the illusion that purification structures, even the most super-modern ones, will save nature. This is self-deception. Any purification structures only push the problem of pollution back in time or shift it to other territories. The solution is to create waste-free technologies in all spheres of human activity.

The fund's assets consist of contributions, entry and membership dues. Both organizations and individuals join the Ecology Fund. Right now we do not have much money—around 2 million. We are directing it primarily to the regions of ecological and elemental disasters.

We are already conducting around 200 programs. Inventors from all over the country are coming to us. We support the projects which, in our opinion, are the most promising. Recently, for example, we invested money in the creation of an ecologically pure seagoing vessel: A sail-powered polymaran [multi-hull sailing vessel]. We hope it will prove its consistency and will go into series production. Polymarans could be used for passenger and cargo shipments. Recently we were approached for help by Leningrad specialists with an interesting idea—to use timber by-products for producing lignin.

We support such ecological developments. For quite a few years we have been investing in visual aids on ecology for schools. We have helped organize the all-union ecological newspaper, ZELENYY MIR [Green World].

The Soviet section of the World Information Center has been created on the basis of the USSR Ecology Fund. This is a network of effective computer communication for non-government organizations. At present, an ecological data bank is being formulated throughout the country. In Kemerovo, Sverdlovsk, Nizhniy Tagil, Kiev, and Odessa—in many ecologically unstable areas—branches of this section will be opened.

[Correspondent] What problems are you facing?

[Girusov] They are endless. But the main ones are not in the fund, but in ecology itself. I see that no amount of money will be enough to bring it to a normal state.

The situation is so terrible that from the standpoint of ecology it is difficult to perceive man, who created it, as a rational being. Rather, on the contrary, this is a being which amazingly strives toward self-destruction. Sometimes it seems to me that in the image of man we have a piece of enraged matter which has taken on the goal of destroying itself. We do not have to look far for examples.

What are we doing when we constantly increase the number of thermal and atomic power plants? After all, the multiplied radiant energy which they produce can already be seen from space. The Earth is taking on a reddish glow. Nevertheless, physicists are proudly asserting that they are close to synthesizing nuclear energy. Yet this achievement of science merely increases the chance that Earth as a habitable planet will turn into some variety of stellar body. And I, unfortunately, do not see a real or quick possibility for withstanding the press of atomic energetics together with the military-industrial complex. Moreover, there is an escalation of the ignorant squandering of natural riches. In the Far East, for example, something horrible is going on with the cutting of the taiga and the export of the timber to Japan in

exchange for rags. We at the Ecology Fund have seriously taken up this question. After all, the Far Eastern taiga and the Amazonian selva in South America are the biosphere's last hope. It is specifically the forest which produces oxygen that gives breath to the Earth. It formulates the planet's climate.

[Correspondent] Do you see any practical possibilities for a breakthrough in the ecological situation? Or are you simply stating the inevitability of a catastrophe?

[Girusov] These possibilities are, for example, demonstrated by the coal miners. In striking (although under other slogans), they are helping the ecology both in the fact that they are not excavating soil from the nether regions, and by the fact that they are curtailing thermal power by not providing the fuel which pollutes the environment. The shortage of traditional raw material for the power industry will inevitably make it necessary to seek an alternative to it: Wind power, solar power, etc. In various countries they have long ago focused serious attention on these power sources.

We have begun to create standard ecologically pure cities, settlements, and water reservoirs. We have begun, of course, from that which is easiest—from the village of Pushchino near Moscow. Pushchino is a scientific city, and it is not difficult to bring about order there. It is much more difficult to do so in Ust-Kamenogorsk—one of the most ecologically unfavorable cities in Southern Kazakhstan. A section of the USSR Ecology Fund has been created there. Work is in progress on an ecological map of the city, with identification of the largest polluters and the routes of progression of industrial wastes. Later we will send a mobile ecological laboratory to Ust-Kamenogorsk. We have made an agreement with the German government that the USSR Ecology Fund will receive 100 vehicles from the equipment which is being left behind there by Soviet troops. We will equip these vehicles with mobile laboratories.

Of course, in two and one-half years the Ecology Fund has not yet had time to do much. Nevertheless, there are around 100 cooperatives working under the roof of our fund. Many of them are really engaged in activity which is beneficial to the ecology, as for example the collection and treatment of waste products from industrial enterprises. We are ready to develop and support interesting ideas and endeavors. Our doors are open to new members of the fund, including foreign partners. Understanding the state of the ecology in our country as being catastrophic, we are instilling in those around us the idea that we must immediately give up the passive position.

[Correspondent] Perhaps the time has come to create a political "greens" party following the example of other countries? If it were to appear, would you join it?

[Girusov] I would be one of the first. Such a party is absolutely necessary for our country, with its very sick ecology. And I am not the only one who thinks so. Sociological surveys show that the idea of creating a

"greens" party is supported by 15 percent of the population. This is not at all a small number for the success of a party. In other countries they started with less.

Republics Fail To Agree on Joint Environmental Program

*LD1409012791 Moscow TASS in English 1957 GMT
13 Sep 91*

[By TASS correspondent Yuriy Konorov]

[Text] Moscow TASS 13 September—The former Soviet republics have failed to agree on a joint environmental protection program after a two-day conference in Moscow.

The conference produced little aside from a joint appeal addressed to President Mikhail Gorbachev and its participants have left for their respective republics with an aftertaste of failure.

TASS asked the head of the USSR Ministry for Nature Use and Environmental Protection, Nikolay Vorontsov, to comment on the situation.

"I regret the failure," he said. "Especially since I am sure that any delay in this delicate situation is pernicious. I see no need to put off action until the economic treaty is signed and the status of the republics is determined. We have already signed similar agreements with practically all countries bordering on the USSR as well as with the United States and Canada. Agreements are now being finalized with many other countries.

"I must admit that I had great hopes that the agreement would be signed on 12 September. Nature protection organizations have been recently headed by scientists, not functionaries as before. It is easier for scientists to reach an agreement. Unfortunately, not this time.

"We proposed four forms of participation: federative, confederative, associated membership, and observer status. Under any jurisdiction the republics were free to choose a form that suited them best. After all, we are all in the same boat not only economically but, above all, ecologically."

According to Vorontsov, it is tantamount to a crime to put off signing the agreement: nature overrules all ambitions. "We must think what functions should be delegated to the republics, which to the center and which to the world community. Lake Baykal is not only a national but also an international treasure. I am confident that international verification will cool many people obsessed with mad experiments," Vorontsov said.

"Kazakhstan banned nuclear testing on its territory, and this is wonderful. But as long as there remain Novaya Zemlya and Nevada in the United States, it is too early to feel calm.

"At an international symposium in California, I quoted Andrey Sakharov as saying that nuclear tests killed more

people than the Nazi extermination camps. No one said I was wrong, but even Americans with their celebrated freedom of speech did not dare to publish the figures I cited.

"It is a very serious question indeed. Because of this I believe that ecologists should take part in disarmament talks on a par with diplomats. My golden rule is: the only dictatorship I recognise is the dictatorship of ecology, even in a democratic era."

Chernobyl Cleanup's Legacy of 'Confusion, Incompetence' Scored

*91WN0715A Moscow NEW TIMES in English No 29,
23-29 Jul 91 pp 12-15*

[Text] Paradoxically, the five years since the Chernobyl meltdown have not yielded a scientist or a school of thought capable of carrying out a comprehensive analysis of the entire complex of scientific, technical, sociopsychological and legal aspects of an industrial catastrophe of the magnitude of Chernobyl, an analysis that could be trusted abroad, and more importantly, at home.

People have long since lost all faith in official information, and bureaucrats' appearances on television and in the press are counterproductive for nuclear power generation, for which at least at the present time there does not seem to be any alternative.

The first Soviet nuclear power plant was commissioned in 1954 in the town of Obninsk, and the first large-scale nuclear disaster occurred just three years later, in 1957, when a receptacle of liquid radioactive waste exploded at the Mayak nuclear complex in the Urals town of Kyshtym. The documents and materials pertaining to the Kyshtym disaster were classified secret for 30 years after the actual event.

There were a number of fires in the reactor and equipment of the Beloyarsk nuclear power plant. However, for 30-odd years—that is, until the Chernobyl meltdown—no one cared to at least develop adequate firefighting systems. If a nuclear disaster happens again tomorrow, putting out the fire will once again be the deadly mission of poorly-equipped firefighters.

We took part directly in the Chernobyl cleanup. Like thousands of our colleagues, who are known as "liquidators" in this country, we cannot be indifferent to what attitude may develop in society to Chernobyl and to the possibility of a similar disaster happening. An ad hoc parliamentary commission is investigating the causes of the disaster and the activities of officials involved in it. One can only hope that the commission's investigation will not end by punishing a few minor figures as has repeatedly been the case before. The imperative today is to form a new state social policy aimed at removing the tragic consequences of the Chernobyl disaster and preparing society for industrial disasters that may happen in the future.

Experts at Work

One of the most large-scale actions taken in the early days and weeks after the actual meltdown was the effort to stop the deadly emission of radioactive products from the destroyed reactor, to prevent a chain reaction, to stop the burning of graphite, to cool the active zone, and to reduce the discharge of radioactive products onto the surface.

Initially, the cleanup teams tried to cool the active zone by pumping water onto it, which was senseless, taking into account the magnitude of destruction. As a result, the water flooded the room under the reactor, became radioactive and had to be pumped out later. The decision was made to try to cool the reactor with dry substances.

To prevent a chain reaction, the reactor was filled with boracic acid, which is widely used at nuclear power plants as a material for absorbing neutrons. However, no one took into account the fact that the temperature in the destroyed part of the plant was over 700 degrees Centigrade. At this temperature, boracic acid disintegrates, and the resulting products evaporate.

As for the burning graphite, it must have been regarded as the main reason for the rise in temperature and the chief source of the formation of radioactive sprays. No one remembered that even after a chain reaction has stopped, nuclear fuel continues to warm up for some time. As a source of heat and radiation, the graphite burning in the reactor was tens of times smaller than the nuclear fuel itself.

Lead was dropped into the reactor to cool it. It was believed that lead would cause the temperature to go down. According to the former USSR Deputy Minister of Power Industry and Electrification, Gennady Shasharin, the use of lead was recommended by the Deputy Chairman of State Nuclear Inspection, Corresponding Member of the USSR Academy of Sciences Victor Sidorenko, in order "to reduce the radiation." The decision to start dropping lead was made despite Shasharin's insistence that the main danger was not the gamma radiation from the destroyed reactor, but the discharge of radioactive vapors and sprays.

The Boiling Point of Lead

The circumstances under which this decision was made and the level of competence of the people who made it are described in the testimony of Yevgeniy Ignatenko, the former deputy head of Soyuzatomenergo: "I had only one reservation, the temperature of the boiling point of lead. For some reason I thought it was around 900 degrees. This meant that the lead would boil and radioactivity would be discharged together with the lead vapors. I tried to check this at the chemical laboratory of the plant, but there was no reference book. Finally, I called up my wife in Moscow. She asked me to call back

again in half an hour, and when I did so, she told me the boiling point of lead was 1,700 degrees. This suited us perfectly."

Why was the boiling point of lead the only thing that worried Ignatenko? Why didn't other participants in the discussion consider the fact that at a temperature close to 1,000 degrees lead can only exist in a liquid state and can evaporate without any boiling? Evidently the whole amount of lead dropped into the reactor—about 2,400 tons—evaporated very quickly, carrying radioactivity into the atmosphere.

After the reactor was buried under sand and other dry substances, the normal flow of air into the crater was disturbed and the natural cooling stopped. As a result of the ensuing "dry boiling effect, radioactive discharge intensified on 3-5 May, and the temperature in the crater soared to 3,000 degrees. In its turn, the increase in temperature resulted in the enrichment of the discharge with non-volatile radioactive isotopes, plutonium in particular. The burying of the reactor resulted in even greater radioactive contamination of the area and exposure of army units involved in the cleanup to overdoses of radiation.

No less debatable is the decision to rush ahead with efforts to prevent radioactivity from spreading with underground and surface currents of water. A whole complex of protective measures was carried out, including strengthening the banks of the River Pripjat, building 131 protective and filtering dams, drainage curtains, a 0.6-meter thick wall of watertight materials constructed at a depth of 3-35 metres and fencing off an area of about 350,000 square meters. The analysis of the rates of migration of radioactive substances in the environment, and the fact that the meltdown occurred after the spring high flood, could have suggested that the water-protecting measures could have easily waited for at least several months. Had these measures been carried out at the end of summer, workers involved in the construction would have been exposed to much less radiation.

Another violation of common sense was the effort to decontaminate the plant itself and adjacent areas in May in conditions of continuing fallout. It took the whole summer for the government commission to issue its September decision, ordering that all decontamination efforts be stopped except for those directly connected with the construction of the sarcophagus.

Naturally, one cannot fail to mention the very first decision made after the disaster. According to the former director of the Chernobyl nuclear power plant, Victor Bryukhanov, on the day after the meltdown he received an instruction from the Minister of Power Industry to work out the *schedule of reconstruction of the damaged power-generating unit*. When Politburo members Nikolai Ryzhkov and Yegor Ligachev arrived at the site of the disaster, they were told that according to the schedule, the reactor would be back in operation by autumn or

winter. "I thought I would die of shame," Bryukhanov confided. What reconstruction could be discussed when the reactor was totally destroyed? Why was the decision to reconstruct the reactor made immediately after the disaster and the decision to evacuate the population of the exposed areas only two days later?

The discussion in earnest of such plans on the government level in the context of an extraordinary situation shows the utter incompetence, if not the amorality, of the decision-makers.

A Reserve for Ministries

Until April 1986, the peculiar feature of the Soviet nuclear complex was that the designing of nuclear power generating reactors, processing and enrichment of nuclear fuel, and burying of nuclear waste was the responsibility of the Ministry of Medium Machine-Building, while the everyday running of the nuclear power plants was the domain of the USSR Ministry of Power Industry and Electrification. Moreover, these two ministries were subordinate to different structures within the Council of Ministries of the USSR. The State Committee of the USSR for Hydrometeorology and Environmental Control, responsible for radiation monitoring, and the State Nuclear Inspection of the USSR, responsible for nuclear safety, also acted in parallel.

The problems of radiation medicine, radiation effects on biological objects, and anti-radiation protection were the sphere of specialized institutes within the Ministry of Public Health of the USSR. Thus, the problems pertaining to the functioning and development of the nuclear power-generating industry could be considered comprehensively only on the level of the USSR Council of Ministers. As for the Council of Ministers, it assumed responsibility for the ministries' decisions, rather than controlling those ministries. Naturally, this pattern of work generated an atmosphere of collective irresponsibility.

After the Chernobyl disaster in April 1986, the Ministry of Nuclear Power Industry was formed. The new ministry could hardly radically upgrade the management of nuclear power plants, because this would require a total revision of the concept of nuclear power generation and creation of a qualitatively new management system could only be considered afterwards. It probably would have been better to reassign all the nuclear power plants to the Ministry of Medium Machine-Building, which constructed the plants and, compared with other ministries and departments, was marked by greater discipline and a significant scientific and technological potential. However, a new ministry was established, responsible for monitoring the spending of money allocated by the state on the cleanup effort, which had already become a separate paragraph in the national budget. After the sarcophagus was built in 1986, prodigious material resources and funds were allocated for scientific research, reconstruction and running of the Chernobyl plant, decontamination of the nearby areas and villages

and the construction of the town of Slavutich, situated 60 kilometers from the plant and intended to serve as the settlement for the plant's personnel instead of the heavily-contaminated town of Pripyat.

In 1986, the Industrial Association Kombinat was set up in the framework of the new ministry. The Chernobyl nuclear power plant became a part of the association. In fact, Kombinat soon became the absolute master of the exposed 30-kilometer zone around the plant and started to control all the funds the government allocated for the cleanup.

At the same time, the government commission based in Chernobyl continued to sanction large-scale and costly technological solutions and projects. Quite often these projects were generated not by necessity, but by the contractors' desire to grab a fatter share of government allocations. If someone rightly suspected that the number of people and organizations, the money allocated to them, or various technological projects were not commensurate with the objectives of the cleanup program and turned to Kombinat for explanations, he was shown the instruction of the Ministry of Nuclear Power Industry. In its turn, the ministry referred to the orders of the Fuel and Energy Complex Bureau under the USSR Council of Ministers. At the same time, defending the significance and expediency of its efforts, Kombinat referred to the relevant decision of the government commission. The commission's decisions were based on the opinions of experts who were mostly representatives of organizations interested in continuing financially profitable contract relations with Kombinat.

'The Provider'

What is the 30-kilometer zone of evacuation to which many a lyrical report continues to be devoted even now?

The conditions of work in the zone were defined as "extremely hazardous," which meant a special system of payment. All salaries and wages were doubled and beefed up with monthly 50-percent bonuses, some other forms of payments, three free meals a day, free uniform and hostel, and the prospect of early retirement. Each fifteen day period of working in the zone was followed by a fifteen-day vacation. Naturally, many of those who came to work in the zone deemed it their professional and moral obligation. However, most leading positions were occupied by bureaucrats, who had not been very happy about their career prospects in other jobs, scientists who wanted to cash in professionally on the Chernobyl tragedy, and mediocrities whose ambitions greatly exceeded their professional capabilities. Many such people were thinking about more profitable terms for their upcoming retirement—at a time when army units were carrying out the most difficult and dangerous cleanup missions.

The word "provider" that soon came to define the sarcophagus can help illustrate the ideology of cynicism widespread in the zone. The regime of the closed zone inaccessible to public control could not but encourage a

feeling of impunity. The lists of information that could not be disclosed were at times absurdly long. Any report concerning Chernobyl problems was severely censored.

'Blacks' and 'Whites'

Depending on the kind of activity and position, people had different opportunities in the zone.

First. After the population had been evacuated, a lot of property formerly belonging to the people was left behind. People were paid compensation, and the property, including cars, small river craft, furniture, consumer electronics, etc., became no one's. Furthermore, there were the stocks of the retail network and the property which used to belong to various enterprises and organizations. Part of the property was used directly in the zone, the rest was buried as radioactive waste. Who can now check how many cars were really buried and how many safely escaped?

Second. The zone was getting much from the country. In the context of chronic shortages of food and construction materials, material supplies on the basis of personal connections, absurdly complicated system of accounting for material valuables, and unending personnel reshuffling, the opportunities for misappropriation in the zone were indeed great.

Third. Special canteens for bosses appeared in the zone, as well as black and white Volga cars with privileged license plates, sirens and flashing lights. Bureaucrats were fighting for cushy jobs, and as a result, the organizations they represented started to conflict as well.

The use of army units was perfectly justified in the early weeks after the disaster. The army carried out the crucial missions, such as radiation and engineer reconnaissance, the setting up of field decontamination posts, decontamination of transport routes, and air transport operations.

Later, the army units manned with called-up reservists turned into a mass of unskilled workers, carrying out a tremendous but mostly senseless mission of decontaminating everything in sight.

Soldiers—workers, drivers and builders only yesterday called up under the pretext of regular military training—served for up to six months in the zone until they had been exposed to the critical individual dose of 25 rems. It goes without saying that the dosimetric control, living and transportation conditions and provision with uniforms and food were much worse for army units than for civilian personnel.

Deepening contradictions between "blacks" and "whites," reluctance to carry out senseless and tiresome work, and the lack of any attention and concern on the part of the state bureaucracy to the fate and health of hundreds of thousands of people who had undergone "military training" in the exposed zone, resulted in the emergence of public organizations like Association Chernobyl, which started asking the state "tricky" questions.

In addition, the secret information leaking from under the barbed wire fences of the zone cast a dark shadow on the official heroic legend and aroused mixed feelings in miners, soldiers and builders who dug tunnels under the reactor, cleaned up graphite and nuclear fuel from the roof of the third reactor, drove cement mixers, piloted helicopters, and constructed the sarcophagus in the spring and summer of 1986.

A Macabre Feast

What is happening in the zone now reminds one of macabre feasts. The threat of losing their privileges and cushy jobs makes whole work collectives and their leaders go to enormous lengths to keep their perks. As a result, some organizations get rechristened, new profitable jobs are invented, and functions are redistributed.

The Ministry of Nuclear Power Industry, set up after April 1986, has been dissolved. Its former function of running nuclear power plants has been reassigned to the Ministry of Medium Machine-Building, which now goes by the name of the Ministry of Nuclear Power and the Nuclear Industry of the USSR. The Industrial Association Kombinat has been closed down to be replaced with the Scientific Industrial Association. This confusion is characteristic of all five years that have elapsed since the meltdown.

Unlike other organizations working in the zone, the nuclear power plant itself is doing serious work—producing electricity. However, the decision of the Ukrainian government to shut the plant in 1995 is a hard blow to the personnel of the station and may turn the newly-built town of Slavutich into a center of critical unemployment. The Ukrainian government decision will also render meaningless the cost of the Slavutich construction and many other large-scale projects. A logical result of shortsighted and incompetent planning policies....

What will happen next?

The recently enacted law of the Ukraine "On the Legal Regime of the Territory Exposed to Radioactive Contamination as a Result of the Chernobyl Disaster" stipulates the setting up of the Administration of the Zone, a special body in the system of the State Committee of the Ukraine for Protection of Citizens from the Consequences of the Chernobyl Disaster. However, the "new" administration may be composed of old figures, and fresh hundreds of millions of rubles will go down the drain.

The American surgeon Robert Gale, who helped treat Chernobyl victims, said that the Chernobyl disaster was the ultimate symbol of all Soviet problems. We believe that the main problem is the moral decay of society.

Yeltsin Signs Decree on Chernobyl Disaster

LD1509030991 Moscow Russian Television Network
in Russian 1700 GMT 14 Sep 91

[From the "Vesti" newscast]

[Text] [Correspondent S. Milyanchikov, identified by caption] Boris Yeltsin, the president of Russia, has signed a decree on eliminating the consequences of the accident at the Chernobyl AES [nuclear electric power station]. A law on protecting victims of the accident was adopted in May of this year. Even earlier a Russian Soviet Federated Socialist Republic State Committee on the Chernobyl Accident had been set up. What has been accomplished since then? [Video shows Yeltsin decree and other directives, with certain passages underlined, then map with areas shaded in different colors; interview with Voloshchuk in his office]

[S. Voloshchuk, Chairman of RSFSR State Committee on Chernobyl, identified by caption] The current state of affairs—the scientific and technical facilities actually available to us and the practical opportunities in terms of manpower and funds now deployed in surmounting these consequences—is such that our efforts are still manifestly inadequate.

[Milyanchikov] With German assistance, checks have now been carried out on people living in the affected areas. The furthest limits of contamination have been established. Radiation has left its mark on 12 oblasts and one kray in Russia. In some places the level of radiation is no lower than in Pripet. Even today, according to Semen Voloshchuk, there is no radical way of combating the consequences of the accident. There is no way of knowing what children of the second generation will be born like. But in addition to areas affected by the fallout from Chernobyl, there are also entire regions in our republic where the level of radiation is several times higher. [Video focuses on Yeltsin directive which is entitled: "Directive of the RSFSR President on Measures To Protect People of Gorno-Altay SSR, Altay Kray, and Orenburg Oblast Living in Areas Affected by Nuclear Tests"]

The president has also issued directives on these oblasts. So one can only hope that sometime in the future—albeit distant future—we will no longer live on a large radioactive tip. [Video shows aerial shot of industrial area]

Kurchatov Institute Deputy Director Disputes Chernobyl Coverup Claims

LD2509223391 Moscow TASS in English 1600 GMT
25 Sep 91

[Text] Moscow, September 25 (TASS)—Allegations that IAEA [International Atomic Energy Agency] concealed their findings into the aftermath of the Chernobyl accident are a lie, Academician Spartak Belyayev, deputy director of the Kurchatov Atomic Energy Institute, told TASS, commenting on Soviet Physicist's Vladimir Chernousenko claims.

Chernousenko told the KOMSOMOLSKAYA PRAVDA newspaper last Saturday that IAEA had distributed the former Soviet government's "consoling version" which played down the Chernobyl aftermath. "Senior IAEA leaders are heading an international nuclear mafia and would stop short of nothing to promote nuclear energy," Chernousenko claimed.

The Soviet government asked IAEA to help evaluate radioactive contamination after the Chernobyl accident, Belyayev said. IAEA then appointed seven international organizations and 250 highly qualified researchers from 25 countries took part in the Chernobyl project. Concrete settlements in the Ukraine, Belorussia and Russia were jointly selected for the purpose.

Belyayev acknowledged that there were certain differences in Soviet and foreign measurements of radio nuclides in the contaminated areas. Soviets spotted less strontium than foreign experts as they did not have the necessary up-to-date equipment and qualifications. But the measurements of the main pollutant—cesium—were the same, Belyayev said.

Vladimir Chernousenko's traces have been lost since his participation early this month in an international ecological conference in Mexico, KOMSOMOLSKAYA PRAVDA said. There are reports, however, that he won't return to the Soviet Union after his allegations.

President of Nevada-Semipalatinsk Movement Interviewed

91WC0160A Alma-Ata KAZAKHSTANSKAYA
PRAVDA in Russian 13 Jun 91 p 3

[Interview with Olzhas Suleymenov, president of the Nevada-Semipalatinsk antinuclear movement, conducted by AZIYA-PRESS independent press agency correspondent: "A Termless Moratorium. Directive!.."]

[Text] [Correspondent] M. S. Gorbachev visited Kazakhstan at the end of May. He was asked questions about the fate of the Semipalatinsk test site. His answers did not reassure Kazakhstan residents. We understood that there are plans to resume testing at the site, which has been quiet for one and a half years "at the fault" of the Nevada-Semipalatinsk antinuclear movement. You were not present at these meetings and have not yet expressed your attitude toward the USSR President's responses, but we would like to learn of it.

[Suleymenov] Two weeks before the high-level visit, I met in Moscow with Mikhail Sergeyevich. In the course of our conversation, he mentioned his desire to visit Kazakhstan, but did not give an exact date, and evidently did not know it himself at that time. Otherwise, I would have undoubtedly participated in his meeting with the active membership in Alma-Ata. At the end of May, I was in Istanbul at a conference dedicated to the opening of the Turkish branch of the Nevada-Semipalatinsk movement. I learned of Gorbachev's trip from the newspapers.

Yet even before that, I learned of the letter written by Minister of Defense D. Yazov and Minister of Atomic Power and Industry V. Konovalov to Presidents Gorbachev and N. A. Nazarbayev, in which they spoke of the need for conducting a series of tests at the Semipalatinsk test site in 1991. These tests would be comprised of three medium and low capacity blasts—two at 20 kilotons and one at one kiloton. It was explained that these blasts were for calibration purposes, within the framework of the 1974 agreement on marginal capacity. It was proposed that compensation in the sum of 250 million rubles be paid to the population of rayons surrounding the test site over a period of five years. A draft of the USSR president's decision on final cessation of nuclear tests at the Semipalatinsk test site as of 1 January 1992 was affixed to the letter. These documents, as I know, were discussed in our Supreme Soviet and in the USSR government. As a result, the sum of the proposed compensation increased significantly.

I am also aware of the counterresolution of N. A. Nazarbayev to the ministers' letters: "Only with the agreement of the Kazakh SSR Supreme Soviet."

In May of last year, the republic's parliament adopted a resolution on cessation of testing at the Semipalatinsk test site, and at the end of the year it voted for the Declaration of Sovereignty, Article 11 of which states that: "The testing of weapons of mass destruction—nuclear, chemical and biological—is prohibited on the territory of Kazakhstan." If we agree with the proposal of the military-industrial complex, then the Declaration of Sovereignty ceases to be a serious document. Tomorrow we will be able to correct one more article, and the day after—all the rest. And the sovereignty of Kazakhstan, without ever having time to be filled with real content, will become another political metaphor, and nothing more.

Moreover, there is one circumstance which puts us on guard, and to which we must pay particular attention. These are to be calibration tests, conducted under the observation of the Americans, who will be present at the test site from the drilling to the actual blasts. The instruments here and in America must define the physical parameters characteristic specifically for this territory, for its soils and geological structure. Thanks to these data, it will be possible to precisely determine the capacity of the tests being performed in the future. This is necessary for adherence to the agreement on marginal capacity of 150 kilotons. But if the test site is soon to be closed forever, then why do we need these measurements, these calibrations? Is not the test site being prepared for further use? Then what good is the draft of the President's resolution regarding its closure? A decision which they know ahead of time that they do not intend to honor. I do not think that the honorable ministers have understood all the fine points of the President's letter and draft resolution which have been submitted to them for signature. In whose interests is this deceit, these dangerous games?

[Correspondent] The USSR President's visit took place on the eve of the last round of discussions of the Union Treaty draft, according to which the sphere of defense is relegated to the management of the union government. This also includes questions of test sites.

[Suleymenov] The republics which are ready to sign the Treaty do not absolve themselves of the concern for the defense capability of the Union. It will remain a mighty power, following the doctrine of prudent-adequate defense. It must be coordinated with the defense doctrines of other states. And we must prepare ourselves for this stage of interaction, assuming the most minimal levels of nuclear arms capable of guaranteeing international security in the transitional period to nonnuclear defense. According to the drafts of the protocols to the Union Treaty, all questions of location and operation of military bases and test sites must be coordinated with the republics on whose territories they are located.

Moreover, the republics, as the exclusive owners of the territory and all the natural resources, stipulate in their agreements with the federal departments not only the size of the areas and sums of compensation, but also the degree of danger which the objects pose to the health of its citizens. And nuclear military facilities are dangerous for every living thing on Earth. Even if the compensation exceeds the republic's budget, it will not appease our debt to humanity.

[Correspondent] Yet will there not be contraposition of republic egoism to all-union interests? The Semipalatinsk test site is quiet, and the one in Novaya Zemlya has practically been abandoned. The USSR is not testing nuclear weapons, but the United States, France, England and China continue to do so. The nuclear parity which we achieved with such difficulty is clearly being disrupted. Your perennial opponent, Deputy N. Petrushenko, wrote in his polemics with you that foreign critics have referred to the Soviet Union as an Upper Volta with nuclear missiles, and that you want to deprive us even of this advantage, i.e., to place us in the same economic rank with a backward African country.

[Suleymenov] It is because of our missiles that we have become an Upper Volta. The country looks like a half-starved, half-clothed warrior with a golden gun which shoots diamonds... Our movement has been accused of many sins—of antipatriotism, of pursuing nationalistic goals, of inciting antimilitary sentiments. We are not a party. We are a popular movement which unites people with a single common goal, common for all parties and nations. The nuclear-ecological danger does not pay attention to passports and party cards. Our branches have opened in Moscow, Leningrad, and Yakutia. The Nevada-Semipalatinsk committee has begun to operate in Barnaul, uniting like-minded people of five Siberian oblasts. We work in close cooperation with the Chernobyl Union and the Nevada-Novaya Zemlya Society formed in the northern oblasts of Russia.

No, it is not regional patriotism which motivates us, but rather all-human. Otherwise we would not have received such support in the world. Branches of our movement have opened in Germany, the United States, Turkey, and South Africa. Together with the international organization: World Doctors for the Prevention of Nuclear War, we have become the initiators of unification of all related organizations into one—the Global Antinuclear Alliance, which was declared on 10 January in New York. The official name of this organization included the names of five operating test sites: Nevada—Semipalatinsk—Mururoa—Lobnor—Novaya Zemlya.

We are in favor of the Soviet Union, the United States, and other countries giving up the advantage of nuclear missiles. Otherwise, in time even some Upper Volta will get them.

Thanks to the eternal argument of the military-industrial complex which states: "But others are testing!", congresses and parliaments have allocated taxpayer's funds for the continued development of nuclear weapons. The appeals for all to simultaneously stop testing have not led anywhere. The military-industrial complexes of the nuclear powers are in close cooperation with each other. They are interested in each other and motivate each other toward activity. If you work, then I have work too. These are Siamese twins, who have a common blood flow. If one gets sick—the other is ill too. This image has suggested to us the following strategy: We must stop ourselves, and then others will stop too. We must fight for peace in our own house. The Roman rule, "If you want peace—prepare for war!", did not save them from war. The ones who were most prepared were the ones who started it. We are proposing a new declaration: "If you want peace—prepare for peace!"

Perestroika in our country has evoked a restructuring throughout the world. Ideological confrontation is disintegrating. There are fewer and fewer dictatorial regimes on the planet, and the democratic colors are revitalizing the world map. The last empires are restructuring themselves. The imperial ideal, which for thousands of years has not allowed mankind to rest, is itself crumbling. The logic of history shows that imperial weapons—nuclear, chemical and biological—have outlived their usefulness. They must disappear from our arsenals in this decade. Then mankind will be able to enter the 21st Century, the third millennium, without fear and without the threat of self-destruction.

The idea of a nuclear-free 21st century proclaimed by Gorbachev in 1986, the year of Chernobyl, is being implemented with difficulty. The adherents of the categories of Roman law are a significant force. Therefore, we need to activate the popular and parliamentary movements at this stage. Without them, presidential activity will be extinguished by the arguments of fanatics in uniforms and professor's gowns.

[Correspondent] However, thanks to the politics of the new thinking, much has been achieved during these years

in the sphere of disarmament. All short- and medium-range missiles have been destroyed. Evidently, soon an agreement will be signed regarding a significant reduction in the strategic weapons held by the USSR and United States.

[Suleymenov] Nevertheless, there is a certain fineness in this process which has not yet been assimilated by the mass consciousness. In disarming, we are at the same time rearming ourselves. More advanced weapons are coming to replace those which are going to the scrap heap. Instead of atomic shotguns there are nuclear machine guns. I would call the process of disarmament full-fledged if at the same time as the nuclear weapons are being destroyed, work would also be stopped on their modernization and production, and primarily—testing.

[Correspondent] So, Olzhas Omarovich, you insist on stopping tests on a unilateral basis. Yet the United States still continues [its testing] and recently even France detonated a 110 kiloton bomb on Mururoa atoll.

[Suleymenov] Yes, they continue. It would be naive to believe that they would stop all at once, following the example of the USSR.

Fanatics maintain that the policy of unilateral steps proposed by Gorbachev does not justify itself. Let us see if this is so. The Gorbachev moratorium of 1985-1986 was a half-measure. It was announced for a year, and then extended for another six months. They did not have enough patience, and in 1987 the USSR detonated 23 charges. The moratorium should have been announced as being termless, without an ending date. Then there would have been hope for success. The West still did not believe in the sincerity of Gorbachev's policy, and therefore it exhibited a natural caution. Nevertheless, the United States reacted to the moratorium by reducing the number of tests from 17 to 14 already in 1986. And, despite the fact that we resumed testing, they did not increase this number. In 1989, when the movement of the Kazakhstan residents halted 11 blasts out of the 18 which were planned, the United States lowered the level by another three tests. In 1990 the Semipalatinsk test site was quiet, and in Nevada there were only eight blasts.

The ninth blast was conducted by England, which, due to the lack of its own test site, conducts its tests in Nevada with NATO approval. This year, the Americans are planning only four blasts, because the USSR is not conducting tests. If we hold out, then the U.S. Congress will stop financing these operations.

The third generation nuclear arms program has been in operation in America since 1985. And for three years in a row, the nuclear laboratories (Livermore and Los Alamos) were allocated \$350 million annually for this activity. Our people's moratorium has also made its impact known here. In 1989 their funds were carefully trimmed to \$330 million, in 1990—to \$220 million, and this year—already to \$100 million. The staff of the nuclear laboratories has been reduced to one-third its former size.

We may state that the movement of the Kazakhstan peoples has largely facilitated Moscow's and Washington's sharp reduction in the speed of the senseless, ruinous nuclear race for a parity which can never be achieved. Following their lead, Paris recently raised its voice, deciding to sign the Agreement on Nonproliferation of Nuclear Weapons. And in this too there is our contribution.

The American arms dealers are not happy about the success of the antinuclear movement in the Soviet Union. I understood this at my meetings in the White House, Congress, and at the Livermore Nuclear Laboratory. We are depriving them of their beloved work. However, their interests cannot be held above the interests of mankind. Yet how much the world would gain if their brains and their powerful intellectual-technical potential began to work for the needs of man!

Today as never before, the American atomic fanatics need the Semipalatinsk test site to continue its work. Then they will again regain their lost argument and get the necessary financial support.

And our nuclear proponents have answered the appeal for help. They have urgently pushed through the USSR Supreme Soviet the ratification of the forgotten Agreement of 1974 regarding the threshold capacity, and are applying to it their proposed series of tests at the test site. Yet this means a violation of the people's moratorium, a violation of the program of disarmament, an active inhibition of the process of realizing the ideal of a nuclear-free world.

The serious weight of responsibility for the upcoming decision falls onto the shoulders of the Kazakhstan Supreme Soviet and its President, and on the hearts of all Kazakhstanis. Having stopped the test site, Kazakhstan proclaimed itself in global politics, forcing the world to move at an accelerated rate along the path of real nuclear disarmament. Our response must be worthy of this responsibility to mankind.

[Correspondent] In two years, the Nevada-Semipalatinsk movement has done much, as we know. The test site, we hope, will be closed for good and will become a scientific facility under the management of the USSR and Kazakhstan Academies of Sciences. What else?

[Suleymenov] Nevada and other test sites will remain. As long as they operate—we will not rest. In Kazakhstan there are, unfortunately, several other geographical place names worthy of taking their place among the sad ranks of "Chernobyl, Semipalatinsk, Aral, and Kyshtym". If the first part of our program is the closure of test sites which pose a threat to human life and to mankind, then the second part is the rehabilitation of the health of the population in the regions which have suffered. We are fighting for ecological safety in Kazakhstan and everywhere, wherever the rights of man to clean air, land, water and purity of relations between peoples are being

violated. We have created the People's Health Fund for building facilities of social application.

In 40 years, the population of the oblasts surrounding the test site has not received any compensation from the state, if only in the form of hospitals. Aside from assurances that the atomic blasts do not bring any harm to human health. Last year, President Bush signed a law which Congress passed regarding the rights of persons who had suffered injury from nuclear tests and industries. According to this bill, miners at uranium mines, workers and employees at nuclear plants and nuclear power generating plants, and, of course, persons subjected to the effect of testing, have the right to receive compensation in the amount of up to \$100,000. Although even this sum is already considered low. The main thing is that the U.S. government has officially admitted that the state has inflicted harm upon the health of the nation by its atomic operations.

Our state has admitted its guilt for now only in regard to Chernobyl. Yet if the accident had happened not in 1986 but, say, in 1958, as in Chelyabinsk Kyshtym, or decades before glasnost, as near Semipalatinsk, we could be assured that the newspapers would not write about the catastrophe, and that television would keep silent about it. People would live in the irradiated regions, not knowing why they were getting sick and why their children were being born without arms.

We will strive toward the adoption of such a comprehensive law as the Americans have, and first of all it must be adopted by the Kazakhstan Supreme Soviet. We must repent before our citizens, before the millions who left life before their time, before those who are fated to be born as invalids in future generations to the grief of their mothers and fathers, whose genes bear the atomic poison.

The People's Health Fund collects monies from founder enterprises, foreign and Soviet funds. We are not embarrassed to engage in commercialism and all legal forms of business. Such a program cannot be implemented solely from the contributions of citizens. Aside from propaganda work, our friends in the oblast, Russian and foreign sections are establishing relations with business circles and organizing aid for Kazakhstan. I too, as a member of the president's Commission on Humanitarian Aid to the USSR, participate in this activity. For now the aid is expressed in shipments of medicines and food, at times significant but still merely a light rain in a hot desert. We need to build pharmaceutical plants, modern clinics and rehabilitation centers.

A most interesting project whose realization the fund is undertaking is called "Clean Water." Two years ago this idea was part of my electoral program. At that time, I obtained an analysis of the drinking water from the Kzyl-Ordinsk water line. Aside from all else, its arsenic content was 1,000 times greater than the standard. Although, how can there be a standard for poison in drinking water!

People cannot wait for the Aral problem to be resolved on the whole. They are drinking poison. If only for the chance to purify the water of our cities and villages, it was worth fighting for the deputy mandate. Since that time, the Kzyl-Ordinsk analysis results stand before my eyes. They give me strength when I get tired of trying to prove the unprovable to the state dullards! The helpless eyes of the mothers feeding their ill-fated infants with poisoned breast milk give me strength.

For two years, Leningrad scientists have been working together with the engineers at Kazmekhnabor on small installations for the purification of drinking water. The draft plans have already been defended, and reliable prototypes have been promised by the end of the year. With the aid of the Alma-Ata gorispolkom, we are finding plant floor space for the series production of three types of devices—the under-faucet urban type, and the rural type for one cubic meter and 50 cubic meters per hour. And for each city, for each locale, for the specific composition of the water—a set of filters to purify the water of biological admixtures and chemicals. The devices will be distributed free of charge and sold. The under-faucet model costs around 300 rubles. The money earned from this will go to the fund for building health facilities. Using this opportunity, I call upon the collectives of Kazakhstan enterprises to join the founders of the People's Health Fund and to support its projects with constituent contributions. The account number is 606706 at the Kazakh Republic Bank of the USSR Promstroybank (Turanbank), MFO 600013.

Our movement, bringing together people of different nationalities, is making its contribution to international stability and peace of mind of the republic, which is working hard to develop a democratic model of interethnic cooperation. There cannot be separate ecological problems for the Kazakhs, the Russians, the Germans, or others. We are going from meetings, demonstrations and strikes to other less emotional and more effective forms of activity—interaction with parliaments, governments, business circles, and international organizations, and to the propaganda of ecological knowledge.

By means of people's diplomacy, the Kazakhstanis have stopped the test site. Together with the parliamentary movement, we are striving to obtain an official decision, a presidential directive [ukaz], which is possible already this year. Some believe that we are not doing anything if there are not crowds in the streets with posters. As long as the people's moratorium on the Semipalatinsk test site is not violated, we will adhere to the moratorium on meetings. We must be ready for our opponents to resort to the most unexpected steps in order to provoke the people to extremist measures. They are already needling the self-proclaimed "fighters for the people's cause". We decisively separate ourselves from those who in the name of the Nevada-Semipalatinsk movement try to perform actions which have not been coordinated with us. Out of confusion and a desire to become famous, or

for some other reasons, these people are capable of inflicting harm upon the common cause, and not only that of the Kazakhstanis.

We are working in close cooperation with the powerful miners' movement and the entire workers' movement, with social and parliamentary organizations, and with the Supreme Soviet of Kazakhstan and the other republics, and of the Union. This force will today achieve through legal and civilized methods the results whose importance for mankind can hardly be overestimated. Everyone who supports our views and methods of operation is a participant in Nevada-Semipalatinsk! And when all the test sites on earth close down, the Kazakhstanis will truly have the right to be proud. We were the first.

At the request of the authors, the AZIA-Press Agency will forward the honorarium received for this publication from the means of mass information to the People's Health Fund.

Book Reveals Unsafe Practices in Atmospheric Testing

91WC0166A Moscow KRASNAYA ZVEZDA
in Russian 11 Sep 91 First Edition p 3

[Unattributed article: "The Blast Will Be Above Ground"]

[Text] The Military Publishing House is preparing to issue the book "Zasekrechennaya sluzhba" [Secret Service] by A. Zharikov, retired colonel and member of the USSR Union of Writers. It tells of the testing of atomic and hydrogen bombs and of the difficult and dangerous work of those manning the test ranges, among whom the author lived and worked.

The excerpt presented here tells about one of the first atomic explosions that was carried out in 1954 at Semipalatinsk Test Range, recently closed by decree of the President of the Kazakh SSR N. Nazarbayev. Minister of Defense Marshal of Aviation Ye. Shaposhnikov stated at the session of the USSR Supreme Soviet that there will be no more explosions at the test range. The details noted by the author are not only interesting but also prompt all of us to consider once again how horrible the scenario of a nuclear Apocalypse could be.

We officers at the test range were not informed in advance how powerful the atomic blast would be. But we guessed that it would be of medium power: test structures and combat equipment were placed not far from the center of the area being prepared. In a few days it became known that an above-ground explosion was planned.

As required by the program sent from Moscow, in advance my scientific group of eight officers of rear services and material-technical supply set up several vehicles, refueling equipment, field kitchens, tanks and drums of fuel, rubber vessels, boxes of food, and bales of

clothing in areas hundreds of meters from the blast center. They built several depots, dugouts, trenches, railroad and road sections, pipelines, and other things....

The academicians I. Kurchatov, Yu. Khariton, N. Semenov, Ye. Slavskiy, A. Zavenyagin, Ya. Zeldovich, and A. Sakharov arrived several days before the explosion. At that time we recognized only Igor Vasilyevich Kurchatov—because of his beard. All of them were still young, bathed in the Irtysh, played volleyball, and lived in a special hotel.

There were many points on the test range where not even we heads of the scientific groups were allowed to go, just as it was not permitted to take an interest in what your coworker was doing. And although the entire test range was strictly guarded—everywhere there were guards, patrols, barbed wire, and signs saying “forbidden”—the scientists were guarded by young people “in civilian clothing,” who followed them like shadows.

The place for the concentration of the test range workers who had to go out to the test area after the explosion was located on a hill. Through binoculars one could see not only tanks, guns, aircraft, and depots but also dummies. They were about 10 km away. It was a cloudless and hot day. All of us were wearing overalls made out of the material of ponchos, rubber boots, and respirators in protective covers. Several officers had dark glasses.

The loudspeaker crackled.

“Attention! The explosion is in five minutes....”

Soon white aircraft appeared. Ahead was the carrier and a little behind to the sides were fighters. Two eagles appeared high in the sky at this time. They seemed to be frozen in an endless blue, looking for prey on the ground.

“They are finished,” someone said.

The loudspeaker quickly gave the countdown:

“Ten seconds...five....”

The bomber rose higher and the fighters went off to the sides. I covered my face with my arms. When I opened my eyes after a time, I saw a huge ball of fire. It rose rapidly, dragging dirt behind it and forming an enormous mushroom. The sound of the blast reached us, like a nearby howitzer shot.

Lt. Col. N. Prosyannik, the chief of the safety service, was the first to go out to the site in an open vehicle. And we followed him on our routes. The ruined vehicles and tanks as well as aircraft with their wings torn off were smoking and guns lay with their wheels in the air....

There was nothing to be seen at our near site—everything was destroyed. Vehicles looked like crumpled black paper, the field kitchens were broken and scattered 50 meters from their places, and rails were bowed. Surprisingly, however, nothing was burning, not even the torn tank where some fuel was stored. The reason is that

there is no oxygen at the epicenter for several seconds. And when it comes back, the fireball is already too weak to ignite the objects.

The land looks like ash and near the epicenter like slag. Everything is reminiscent of scenes from the Apocalypse.

The radiation level was very high. But we (valiant and rash youth) went to see the crater. Hot air still emanated from it, things were flickering before our eyes, and objects appeared distorted. Our individual monitoring devices were technically inadequate and one showed 26 roentgens and another five, whereas mine indicated just 0.7 roentgen. So what can you believe?

At more distant spots, the clothing did not even catch fire on all of the dummies. Bright fabrics were not harmed. Only the black fur of a surviving dog was burned, whereas the white fur was not even discolored.

This is what surprised us: drums with fuel were smashed but rubber vessels covered with a thin layer of earth were intact. Animals were alive where a brick structure was totally destroyed. The explanation is simple: pressure destroys large hard surfaces but not soft elastic surfaces.

On that and subsequent days, we visited the sites several times and carefully examined the results of the explosion on test objects. We determined the magnitudes of pressure, luminous radiation, and contamination and we prepared detailed reports. They were needed not only by scientists for the improvement of nuclear weapons but also for those formulating instructions for protection against atomic blasts. And we who were working at the test range gained experience in preparation for the next tests of thermonuclear weapons.

A special service followed the radioactive cloud and studied the local radiation conditions. Dosimetric reconnaissance visited several remote population centers, checked the roads and reservoirs, and reported to the command: no dangerous radioactive contamination was detected beyond the region of the resettlement of the inhabitants.

It is probably logical to ask whether it was necessary to deal with all of this, to blow up and test things?

The answer was given even in our time by Yu. Khariton, one of the developers of atomic and hydrogen bombs: “Not all of the consequences were considered at that time. We did not think about the possibility of the destruction of humanity. It was important not to fall behind, not to let the potential enemy surpass you....”

Consequences of ‘Chelyabinsk-65’ Nuclear Accidents Revealed

LD1209214991 Moscow Central Television First Program Network in Russian 1800 GMT 12 Sep 91

[From the “Vremya” newscast]

[Text] The following material is being broadcast under the title “our archives,” both because it formally touches

on events of 20-30 years ago, although the dramatic consequences of these events are with us today, and because this report lay for a year in our editorial archives. The leaders—the previous leaders—of Gosteleradio forbade its transmission. [caption appears on screen, "Our archive," followed by title of film "Chernobyl in installments"]

[Begin recording] [N. Prokofyeva] Last summer here in Chelyabinsk Oblast, an expert commission of 50 scientists was at work. At the same time, the USSR Supreme Soviet received materials on the radiation situation around the operations area of the Mayak production association. [Video shows shots of streets of Chelyabinsk-65]

An interview with Anatoliy Federovich Tsyb, the head of the commission's medical group, has lain for a year in our material intended for broadcast:

[begin recording] [Tsyb] Chelyabinsk-65, a closed town, an invisible town, a town which does not exist on a single geographical map. In the years after the war, the country's atomic shield was built on this dot of Urals land. Reactors for the production of fissile materials for nuclear weapons were built, the first Soviet atomic bomb was prepared and then tested. In 1957 one of the most serious accidents in the history of nuclear power engineering took place at this major defense enterprise—an explosion, as a result of which a large area 105 km long and nine km wide was polluted by radioactive elements. [video shows more street scenes, then inside nuclear enterprise, followed by shots of countryside where signs can be seen reading "Danger! Radiation", "state reserve, The collection of mushrooms, berries, and herbs is forbidden!", "500 curies/square km"]

[Prokofyeva] Information about this accident has begun to appear in the press recently. But there were three accidents. At the start of the 1950's Mayak released radioactive waste into the River Techa; 120 million people were exposed to radiation. In 1967, as a result of the wind carrying radio nucleides, the Karachay Lake on the industrial area of Mayak dried up, or rather burned up. [video shows shots of countryside with further sign: "Danger! radiation"]

[Tsyb] As a result of all these three radiation accidents, more than 400,000 people were exposed to radiation.

[Prokofyeva] Anatoliy Federovich, we have the sad reference point of Chernobyl. If you were to compare the Chernobyl and Chelyabinsk situations?

[Tsyb] Unfortunately, for a long time we kept quiet about the accidents which took place in Chelyabinsk Oblast. I want to stress that the levels of exposure of the population were more than at Chernobyl.

[Prokofyeva] In Chelyabinsk?

[Tsyb] In Chelyabinsk, yes.

[Prokofyeva] The medical consequences of the three accidents: 935 cases of illness in which the diagnosis is chronic radiation sickness. The leukaemia incidence is 40 percent higher than in a control group. Infant death is higher as a result of immunity loss. It has still not been established how many people have died. The people who fought the accident have not been found; on the whole they were soldiers. Everything was kept completely secret. [Video shows more countryside, while on screen captions appear: Chernobyl, 50 million curies, Chelyabinsk 1,200 million curies; Video shows scientists taking measurements]

[Tsyb] The medical bodies in Chelyabinsk oblast did not know the doses, they did not know the actual situation, so they were not able to make the correct medical decisions. There are many ill. But they do not have social protection, disability certificates, no privileges or compensation, and yet they really were exposed to radiation. There are places where children run and play, and we have established that the doses are from 0.5 to one centi-seiferts.

[Prokofyeva] This is today's children?

[Tsyb] Today's children.

[Prokofyeva] And in the coming years.

[Tsyb] In general, the production and testing of nuclear weapons should be closed down, because our commission found significant medical consequences in Chelyabinsk and Semipalatinsk.

[Prokofyeva] That's the view of a doctor. I think the military may have a different view.

[Tsyb] Maybe, yes. [end recording]

[Announcer] I don't know about you, but I would like to look at the world through the eyes of the doctor, the teacher—any eyes, only not the eyes of the military.

Nizhniy Novgorod Nuclear Power Station Future in Doubt

*PM1209102191 Moscow SOVETSKAYA ROSSIYA
in Russian 12 Sep 91 Single Edition p 1*

[TASS report: "Fate of Nuclear Power Station in Nizhniy Novgorod in Doubt"]

[Text] The fate of the Nizhniy Novgorod nuclear heat supply station, designed as a basic source of heat and highly assessed by specialists in an International Atomic Energy Agency independent appraisal, has still not been determined, although about 300 million rubles has been invested in construction and the installation of equipment.

Incidentally, there are now about 50 frozen energy sites in the country.

Prospects for Nuclear Power Examined*OW1509214391 Moscow INTERFAX in English
2032 GMT 15 Sep 91*

[From the "Soviet Business Report"; following item transmitted via KYODO]

[Text] In 1990, the Soviet Union's 15 nuclear power plants (their aggregate capacity: 36.56 million kW [kilowatts]) generated 211.5 billion kWh [kilowatt-hours] of electricity—or 12.5 percent of the nation's total electricity production. This figure falls far short of projected levels.

Program of Nuclear Power Plant Construction for the Period Up to the Year 2000 Is Likely To Fall Through

In accordance with the 1983 program for the development of the nuclear power sector, the nation should have launched another 20-odd nuclear power stations by the year 2000. This would have increased the nuclear sector's aggregate capacity more than five-fold in comparison with the current level, raising its share of national electricity production to 40 percent.

But in recent years work has been suspended on new reactors with a total capacity of 100 million kW—some of the reactors were in the blueprint stage while construction had actually started on others—mainly because public opinion was sharply critical of nuclear power sector development. But the sector owes its problems to the worsening economic conditions of the nuclear power sector operation as much as to the backlash against nuclear power, say experts. Among them are: the huge volume of unfinished projects and the festering differences between the republics, regions and departments. Given this situation, experts describe the 1990s as likely to be a "renovation stage" in the development of the nuclear power sector, i.e., they believe that the decade will see Soviet nuclear capacities modernized, their safety increased, and the growth of nuclear power production nearly stagnant.

Total Capacity of Nuclear Power Plants Can Be Increased Threefold Before 2010

According to the USSR Ministry for Atomic Energy, construction must resume on nuclear power plants in the areas that are plagued by acute power shortages. In seven regions of the country, local authorities have already decided on the construction of new units at the existing local power plants that would have an aggregate capacity of more than 12 million kW. Experts predict that in case this trend persists and if new generations of reactors become operational, the aggregate annual capacity of the nation's nuclear power sector can reach a 100 million kW-mark in 2010, i.e., a nearly 300 percent-rise over the current level. Priority in the development of the nuclear power sector continues to belong to safety. At the current stage, the first-generation units that were built in the early 1970s face major reconstruction and modernization. In some cases, western companies give a hand in

the replacement of worn-down equipment and with personnel retraining. For example, a contract has been signed under which the General Physics Corporation is to deliver a simulator for the training of personnel at the Leningrad nuclear power station. Electricite de France plans to compete for a contract for the reconstruction of the Leningrad station. Joint Soviet-foreign projects will also include personnel training and testing prospective nuclear plant sites for seismic stability. These projects will enlist the participation of leading western companies, including Siemens of Germany and General Energy Technologies of the U.S.

Radioactive Contamination Areas in Moscow Revealed*PM2609143791 Moscow Russian Television Network
in Russian 1700 GMT 22 Sep 91*

[From the "Vesti" newscast: Report by V. Kukushin and A. Kornilov, identified by caption; figures in brackets denote broadcast time in GMT in hours, minutes, and seconds]

[Text] [170902] [Kukushin] More and more secrets are becoming known. As if by magic, independent experts from the Geologorazvedka concern's radioecological department have found sources of radioactive contamination in the capital and other cities of the republic. Here is a map of Moscow. Anomalies—areas of increased radiation—are marked with various squares. Admittedly, we were told that only 15 places are severely contaminated. And the civil defense service has cleaned many of them up with the meager funds at its disposal. Regrettably, only the rich man has the privilege of not living on a trash heap.

[Ye. Dokuchayev, identified by caption] At the moment this area presents no danger to residents of adjoining rayons since it has no effect on the surrounding area. But it does present a potential danger.

[Kukushin] Do you think that it will be possible to find the culprits?

[Dokuchayev] Our experience tells a story. We have been working in Moscow since 1982 and the Geological Ecology Center—I am referring to the Geologorazvedka concern—has discovered 616 areas of radioactive contamination. Yet to date none of the culprits has been found.

[Kukushin] Although this area is dosimetrically clean, nevertheless if you start digging at a depth of five meters you may find anything, any kind of garbage. Vadim Kukushin for Vesti from a mini-Chernobyl [171029].

Yeltsin Orders Program To Clear Urals of Radioactive Contamination

PM2609144991 Moscow Russian Television Network in Russian 2005 GMT 23 Sep 91

[From the "Vesti" newscast: Report over video from Chelyabinsk Oblast; figures in brackets denote broadcast time in GMT in hours, minutes, and seconds]

[Text] [202256] [Kiselev] According to an INTERFAX report, RSFSR [Russian Soviet Federated Socialist Republic] President Boris Yeltsin has signed an instruction on measures to eliminate the consequences of radioactive contamination in Chelyabinsk Oblast. Let us recall the background to this report.

[unidentified voice over video] ...A secret weapons-grade plutonium plant, now known as the Mayak Association, [was built here]. Subsequently, for almost a decade radioactive production waste was being discharged into the Techa River. Then a disaster occurred which was hushed up for almost 30 years. In 1957 a thermal explosion occurred at the Mayak Association. Radioactive contamination spread over an area of some 1,000 square km. Inhabitants of Chelyabinsk, Kurgan, and Sverdlovsk Oblasts were affected. According to specialists, the scale of contamination exceeds that of Chernobyl. To this day the local background radiation exceeds all permissible limits dozens of times over.

Yeltsin was able to see this for himself when he came here on the eve of the Russian presidential election in June. He visited the Mayak Association and population centers which were affected by radioactive contamination at the time of the accident. He talked to the local inhabitants.

Now, by Yeltsin's decision, the Russian Government is instructed to draft within one month a state program to rehabilitate the radiation situation in the Urals region. This program is to be submitted for examination by the RSFSR Supreme Soviet. [video ends with shot of Yeltsin and others in white coats and hats]

German, Italian Firms Join USSR in Power Station Technology Development

91MI0451X Bonn TECHNOLOGIE-NACHRICHTEN MANAGEMENT-INFORMATIONEN in German 18 Jul 91 pp 25-26

[Text] The energy production division (KWU) of Siemens AG has reached agreement with the Soviet Union on a long-term, comprehensive cooperation in conventional power station technology. The principal item is the "Interturbo" joint venture in Leningrad for the production of gas turbines using Siemens technology and the further joint development of gas turbines. Another contract, which also involves the Italian partners Ansaldo-GIE, Milan, and FATA European Group, Turin, confirms the founding of the joint "Energoengineering" engineering company with headquarters in Moscow and offices in Kiev and Minsk. This joint

venture will build modern heating power stations, with emphasis on environmentally-acceptable combined gas and steam turbines (GUD) in the USSR and possibly in Third World countries, will modernize and equip existing power stations with environmental protection technology, and will modernize gas production and gas transport installations. Energoengineering has already received provisional sales contracts for four GUD power stations to be built in Russia, the Ukraine, and Belorussia.

Troitskaya Electric Power Station Endangers Chelyabinsk Fish Farming

PM2609134391 Moscow Central Television Vostok Program and Orbita Networks in Russian 1530 GMT 19 Sep 91

[From the "TV Inform" newscast: Report by S. Sergeyev, V. Sosunov, identified by caption, from Troitsk, Chelyabinsk Oblast]

[Text] [Announcer] Large numbers of fish have perished as a result of an ecological catastrophe at the Troitsk water reservoir in Chelyabinsk Oblast.

[Sergeyev] The Troitsk reservoir is one of a few where fish are bred all the year round thanks to warm water from the Troitskaya GRES [state regional electric power station]. One of Russia's biggest fish farms is located near the station. However, this neighborhood is fraught with a certain danger. Because of the discharge of harmful substances into the reservoir this is not the first time that fish have died. But never on this scale. In a matter of days 600 tonnes of carp, trout, and sturgeon have perished. Half of the annual catch has ended up on the garbage dump.

Clearly it is not just the power station workers who are to blame. Effluent from all the industrial enterprises in Troitsk is discharged into the water reservoir. The old purification installations can no longer cope. And although the commissioning document for new installations which took 17 years to build was signed last year, the new complex is essentially standing idle.

According to preliminary estimates the fish farm has sustained losses totaling 4.5 million rubles. This has virtually bankrupted the enterprise. Unfortunately, this has happened precisely when the collective, overcoming many difficulties, had finally won the right to transform the fish farm into a leaseholding enterprise.

Those responsible for the loss of the valuable fish must be identified. However, the local law enforcement organs are in no hurry to do so. Meanwhile time does not stand still and evidence is vanishing fast with every passing day.

Oceanic Thermal Power Stations Planned for Siberia

LD2009041691 Moscow TASS in English 1558 GMT 19 Sep 91

[By TASS correspondent Nikolay Krupenik]

[Text] St. Petersburg, 19 September (TASS)—Soviet scientists are planning the construction of large-capacity power stations in the estuaries of Siberian rivers without building dams and reservoirs. The stations will not use the energy of current, but the difference in temperatures of cold arctic air and relatively warm water under the ice cover.

"Prospects for creating oceanic thermal power stations as a nontraditional ecologically pure source of energy is now being developed by research centers of many countries", Yuriy Babayev, vice president of Soviet Polar Explorers Association, told TASS. He said the idea of transforming warmth of the ocean into electric energy was first suggested in the 19th century, but it has become feasible with the present level of scientific and technological progress.

Preliminary calculations of power engineers show the arctic coast of the USSR is most suitable for such stations. Data taken over many years for the average annual temperature of the air in the estuaries of Siberian rivers is minus 13.7 degrees centigrade, and temperature in winter drops to minus 52 degrees. The temperature of water under the ice never drops lower than minus 1.5 degrees.

Experts estimated energy sources of coastal arctic districts and possible capacity of envisaged oceanic thermal stations. They seem to be able to compete favourably with diesel electric power stations. Moreover, they will make it possible to save diesel fuel, which is in short supply, and to preserve the fragile nature of the extreme north.

Military Secrecy Hampers Murmansk, Kola Radiation Survey

LD1509061291 Moscow Russian Television Network in Russian 2000 GMT 14 Sep 91

[From the "Vesti" newscast]

[Text] As a result of the Chernobyl accident, a map showing the distribution of radioactivity in the European USSR is being compiled. The work is being financed out of the state budget. The program, known as "Atlas," also includes an aerial survey of Murmansk and the Kola peninsula. The Arctic capital is packed with nuclear-powered vessels, enterprises providing maintenance and servicing for the nuclear-powered fleet, and storage facilities for radioactive waste from ships. This small oblast accommodates bases for the Navy's nuclear fleet and a nuclear power station. Maybe that is why local people are anxious about radiation. The Nevskiy biological production association has investigated a large

part of the peninsula. However, the headquarters of the Northern Fleet has clamped a veil of secrecy on a considerable expanse of territory, including Severomorsk and its suburbs.

The equipment showed a serious deviation from normal 50 meters above two industrial installations in Murmansk. Geophysicists from a laboratory on the ground were denied access to the premises and were, therefore, unable to check them out. This year similar work was carried out in Estonia without any obstruction—not, perhaps, because there is a different level of secrecy there but because there is a different level of freedom. [Video helicopter view of forested landscape, port with ships at anchor; view of buildings and shore installations; hills in distance; close-up of ships at anchor; view of measuring apparatus aboard helicopter]

Greenpeace Calls For Disclosure of USSR's Nuclear Waste Disposal at Sea

AU2409164191 Paris AFP in English 1625 GMT 24 Sep 91

[Text] Moscow, Sept 24 (AFP)—The environmental group Greenpeace called on the Soviet Government Tuesday to disclose full information on nuclear waste disposal at sea after a Soviet official confirmed for the first time that the practice had gone on for more than 20 years.

Greenpeace also urged the Soviet Navy to make public its plans for decommissioning nuclear-powered vessels and to disclose how it will dispose of nuclear waste from ships and civilian power plants in the future.

"There is a wall of military secrecy in this country still," said John Sprange, coordinator of Greenpeace disarmament activities in the Soviet Union.

Speaking at a news conference, Sprange and other Greenpeace officials called on Western countries to heed a Soviet appeal for technical assistance in developing new means of disposing of nuclear waste.

The United States should take "bold steps" to aid the Soviet Union in disposing of nuclear waste, said Joshua Handler, head of Greenpeace's naval nuclear research department. "It would be very helpful if the United States came forward to provide technical assistance on defense conversion, notably in the shipbuilding industry," Handler said.

Their remarks came a day after Andrey Zolotkov, a deputy to the Supreme Soviet from the northern Russian port of Murmansk, disclosed that Soviet civilian and naval vessels had dumped highly radioactive waste in the Barents and Kara seas between 1964 and 1986. Zolotkov's disclosure marked the first official admission from a Soviet official that nuclear waste had been dumped at sea.

According to a report presented by Zolotkov to Soviet and Western delegates attending a two-day Greenpeace

conference here, the waste dumped included a container holding the damaged reactor core from the nuclear-powered ice-breaker Lenin.

The Lenin suffered what Greenpeace described as "a serious reactor accident" in the mid-1960's and the reactor, "still containing its highly radioactive and damaged nuclear fuel, was dumped off the island of Novaya Zemlya" between the Barents and Kara seas, according to the report.

Murmansk Oblast Institutes Environmental Monitoring of Northern Fleet

LD2509092491 Moscow Radio Rossii Network in Russian 0900 GMT 24 Sep 91

[Text] A sensational statement was made at a briefing in Moscow by USSR People's Deputy for Murmansk Andrey Zolotkov. I would remind you that the briefing was on the problems of maritime nuclear installations and their effect on the environment. In Zolotkov's words, from 1964 to 1986 ships from the Mysensk Shipping Line dumped nuclear waste for storage in the Kara Sea, where they were submerged in the bays of Novaya Zemlya. Zolotkov has given Greenpeace, the international ecological organization, a map of these stores. He drew attention to the fact that the radioactive waste was not stored in hermetically sealed containers, so there were leaks of substances into the urban environment. Zolotkov also said that the latest session of the Murmansk Oblast Soviet sent an appeal to Russian President Yeltsin. This proposes that a comprehensive international expedition be organized to this region of the Arctic so as to establish the true picture of radioactive storage.

Ecology and the military—cooperation or confrontation. I'll hand over to our Murmansk correspondent Yuriy Arkhipov.

[Arkhipov] It is now no secret that the armed forces of our country have a considerable effect on the environment where they are deployed. On the Kola Peninsula, as everywhere, the problem is that nobody is able to monitor this department. And now, for the first time in the history of the Order of the Red Banner Northern Fleet and the environmental protection organizations of Murmansk Oblast this monitoring has become possible.

The Oblast Environmental Protection Committee has drawn up a plan for comprehensive monitoring of the observance of environmental legislation by the garrisons, units, and subunits of the Order of the Red Banner Northern Fleet. Ecologists are interested in the sources of pollution of the water, air and soil. Particular attention is being paid to studying radiation safety issues. I'll read several points in this important section: it is essential to study the rates of formation of solid and liquid radioactive wastes, to ascertain how much waste is stored, and to forecast the amount of waste to come in the next 10 years. These are the plans sent to the military by the ecologists. The plans were studied at length and

have been approved, but with the proviso that naval experts will also take part in the monitoring. Indeed, as yet the precise date when this work will start is still not known. Representatives of the Oblast Environmental Protection Committee have been told: wait for the call. They have already been waiting since the start of September.

In the end the phone will ring and the monitoring will get going, but there are great doubts that it will end up being comprehensive, even though the command of the Order of the Red Banner Northern Fleet has given the inspector's assurances that everything will be shown. As they say, we'll believe it when we see it. Until recently, the bastions of the Order of the Red Banner Northern Fleet have been virtually immune from such checks.

Search Team Recovers Items From Sunken Nuclear Submarine Komsomolets

PM2609133591 Moscow Central Television First Program Network in Russian 1800 GMT 18 Sep 91

[From the "TV Inform" newscast: Report by V. Batalov, V. Zhuravlev, identified by caption, from St. Petersburg]

[Text] [Announcer] Members of an expedition to investigate the submarine Komsomolets which sunk two years ago have returned to St. Petersburg.

[Batalov] The submarine has found its last haven at the bottom of the Norwegian Sea, near Medvezhiy Island. This clock stopped for ever at the moment of the tragedy, registering the time of the accident. Members of the expedition dived six times to a depth of 1,700 meters in deep-sea craft. With the help of manipulators they extricated from the sea bed the hydro-acoustic station receiver, a hatch ring, a giant screw bolt which looks as if it had been sheared off with a blade, and other objects which testify to the catastrophe.

Experts also studied the ecological situation carefully, taking samples of water and the sea bed, and measuring radioactivity. After all, under the metal hull of the sunken ship, which is damaged only at the front, there is the reactor and there are torpedoes with nuclear warheads.

The study of the material gathered by the expedition members will only slightly unravel the mystery of the loss of the Komsomolets. The definitive version can only be obtained by raising the sunken ship.

Magazine Details 1986 Nuclear Submarine Accident

LD2709050991 Moscow TASS in English 0229 GMT 27 Sep 91

[Text] Moscow, September 27 (TASS)—"Two nuclear reactors could show signs of runaway any time. And this would mean a catastrophe, which would result in the death of the whole crew and radioactive contamination of a vast water area and air space off the shore of

Northern America," the October issue of the ECHO OF THE PLANET magazine wrote about the 1986 Soviet nuclear-powered submarine accident.

These could be the consequences of an accident equal in its scale to that of Chernobyl.

One can speak of many circumstances of the accident onboard the Soviet nuclear-powered missile-carrying submarine of the Yankee-type only presumably, the magazine writes.

The causes of the accident are not completely clear, materials of the special commission, which investigated the accident, remain classified, and witnesses are constrained by signed statements on nondivulgence.

There was, actually, a fire onboard the submarine, but it was not the cause of the accident. It was rather a consequence.

About 5 a.m. on October 3, 1986, water began to flow into a missile silo of the Soviet nuclear-powered ballistic missile-carrying submarine located about 1,000 kilometers northeast of Bermuda. The water smashed the body of a missile with liquid fuel that led to its leakage and provoked a powerful explosion.

Moscow immediately informed Washington of this fact.

The crew and the submarine escaped immediate death, probably, thanks to the strongly-welded hull and the fact that a considerable part of the explosion energy went out through the silo cover, the damage of which caused the accident.

The fire was localized and extinguished, but the explosion provoked a leakage of poisonous oxidizer, one of the missile fuel components.

After a few hours of fighting for the survivability of the submarine, the power installation remote control system ran out of operation. Only two people could save the situation: group commander Senior Lieutenant Nikolay Belikov and sailor Sergey Preminin. Only they were capable of controlling the reactor by hand.

And these two, making enormous efforts, prevented the catastrophe. However, Sergey Preminin, the only one of the whole crew, did not manage to escape from the hot poisonous steam. The submarine sank.

The possibility of nuclear explosion and radioactive contamination of the environment is excluded, concluded specialists, including U.S. experts.

The magazine recalled that at that time some U.S. papers wrote that in the first half of October, 1986, a nuclear-powered submarine of the U.S. Navy got its hull slightly damaged as result of a collision with an underwater object while patrolling an area in the Atlantic Ocean.

An examination of the U.S. submarine revealed damage to the bow, the bottom part of the hull, and the sonar dome.

After the surfacing of the Soviet submarine, a double furrow, shot with metallic glitter, was seen on its port side. Why did it appear? Experts failed to give a convincing answer.

Some believe that the furrow was made by the cover of the missile silo torn away by the explosion. Others think that the trace was left by a strange object. It is not excluded that this strange object was a foreign submarine, the magazine notes.

Experts Comment on Prospects for Caspian Sea

91WN0706A Moscow DELOVOY MIR in Russian
9 Jul 91 p 4

[Article by Staff Correspondent Namik Azizov: "The Khazar Can Still Be Saved"]

[Text] The "Hoary Khazar," "Pearl of Nature," "Wonder Sea"—what epithets have not been applied to this sea, a body of water unique on the planet with a centuries-old history! Many peoples have found shelter on the Caspian's shores. And it has fed them and united them. But people have not always returned the good favor, and here is the retribution: the ill-considered and sometimes downright predatory use of natural resources has resulted in disaster for the sea. In laying the foundation for offshore oil production in the distant 1940s and 1950s and raising man-made islands, the legendary "Oil Stones," the geologists and oil workers could not have supposed that millions of tons of oil from beneath the sea would eventually cause it countless problems and result in environmental disaster. Hundreds of square kilometers of the sea's surface are now covered with an oil film because of mismanagement, negligence and technological backwardness. Vast zones of the Apsheron water area, having lost their capacity for biological self-purification, have become dead in the literal sense of the word.

The Caspian's glory is also dimming as a chief supplier of the noble sturgeon. There is nothing left in the sea but sprats. And for all this we must "thank" the oil workers and power engineers, chemists, municipal-service operators and agricultural workers who year after year polluted the Caspian Sea's water and coast.

Let me cite figures from a report by Arif Mansurov, chairman of Azerbaijan's State Committee for Environmental Protection, delivered at the First International Conference on the Problems of the Caspian Sea. They vividly characterize the technogenic burden on the Caspian's ecosystem. Azerbaijan alone discharges into the sea annually more than 500 million cubic meters of heavily polluted effluent and more than 300 million cubic meters of effluent that has been treated according to established norms. In addition, more than 3,000 tons of petroleum products, 28,000 tons of suspended matter, 74,000 tons of sulfanol, more than 300,000 tons of chlorides, tens of tons of phenols and hundreds of tons of synthetic surfactants enter the sea.

Azerbaijan is also the leader in the use of toxic chemicals on irrigated land. Most of the toxic chemicals and mineral fertilizers are stored in the open air, and the technology for irrigating and watering the soil lags behind the requirements of modern farming techniques. Therefore, all of the chemicals go into rivers and drainage collectors, and from there—into the sea.

And one more problem: the level of the Caspian has risen sharply. That is threatening huge economic losses and social upheavals. The news from Turkmenia is increasingly alarming—industrial facilities are in danger of being flooded. Large areas of farmlands have been submerged in the Lenkoran zone of Azerbaijan. If the water's current rate of rising persists, waves will soon lap the lower terrace of one of Baku's main attractions, Sea Boulevard. It will be necessary to urgently move industrial facilities that are spread out along the coast of Baku Bay. For all practical purposes, all the Apsheron beaches have already been flooded. Coastal railroads and highways are in danger of being destroyed.

The participation in the conference of a wide range of specialists, and the interest shown in it by the Ayaz Mutaibov, president of the Azerbaijan Republic, made it possible to examine practically all aspects of protecting the Caspian ecosystem.

Grigoriy Voropayev, a corresponding member of the USSR Academy of Sciences and chairman of the Scientific Council on the Problems of the Caspian Sea:

"All the region's peoples and states have a stake in saving the sea. One of the most disturbing topics of the conference was the rising of the Caspian's water level. But I do not see any grounds for panic. Our ancestors knew about the distinguishing characteristics of the sea, which has periodically grown shallow and periodically overflowed its banks. But unlike our contemporaries, the ancient Caspians—the people who gave the sea its name—never settled on the shore. Unfortunately, we have forgotten these elementary truths and are now looking for the guilty parties. We must intelligently assess the nature of the natural processes that are occurring in the sea and not tie up funds in constructing capital-intensive enterprises along the shore."

Murat Mukhamedzhanov, the learned secretary of the Kazakh Academy of Sciences' Institute of Hydrogeology and Hydrophysics:

"We clearly see what awaits the Caspian if the degradation of its ecosystem is not stopped. We must act in two areas: along with the development of basic research on hydrology, the recycling of industrial waste, etc., we must do everything possible to reduce the discharge of untreated effluent into the Caspian. Moreover, organizational and economic-management programs must be nationwide, rather than departmental in scope. For example, in Kazakhstan our Committee on Natural Disasters has made a proposal to the government that specially earmarked capital investments be allocated starting in 1992 to deal with the consequences of the

rising water level of the Caspian. It is time to finally establish economically substantiated norms for charging for the use of natural resources and the damage caused to nature."

Valeriy Tsikeyev, chairman of the Kalmyk ASSR State Committee for Environmental Protection:

"The restoration of the Caspian's health must start with stabilization of the process of environmental pollution. And not just in the Caspian basin but in all the oblasts through which the water arteries that feed the sea pass. We need a unified program for saving the sea that is geared to the long range, and not just to the perfectly foreseeable five-to-ten-year future. Otherwise we will just shift our present concerns onto the shoulders of future generations."

Vladimir Ivanov, director of the Caspian Fisheries Research Institute:

"One often hears it asked which is more important: oil production or preservation of the Caspian's unique fish stocks. I do not accept such an approach. One cannot oppose the one to the other. These areas of economic activity can and should be intelligently combined. By eliminating the main causes of the trouble—flawed oil extraction methods and accidental discharges into the sea, we will substantially improve the ecological situation."

"Rational economic activity requires that the use of natural resources be dealt with legislatively. And that who ever violates the law pays out of his own pocket."

The statements of [John Hartley], a scientific consultant with the British Petroleum corporation who represents three countries in Baku—the United States, Great Britain and Norway—as well as the Amoco and Statoil companies, which are participating in the competition for the right to establish a joint venture to work the promising Azeri offshore deposit, were in line with the stand taken by most of the conference's participants:

"We see our task as defining a spectrum of data on the state of the Caspian. On that basis we will work out a strategy for further activity. I look at the fate of the Caspian Sea optimistically. The situation is not so bad as to give up. It is very important to thoroughly analyze the mistakes that have been made in the case of the Aral Sea and not to repeat them. Our company is providing clear-cut environmental guarantees in connection with the exploitation of the Azeri deposit. The latest environmentally clean technologies and equipment that will not pollute the sea will be used there."

Dr. [Russel Hinds], vice president of the American company [Kelley-Hinds] International Incorporated, which specializes in environmental protection, offered his services in protecting the Caspian. The region of the Texas-Louisiana coast of the United States where the company's headquarters are located and the adjoining

area of the Gulf of Mexico are similar to the oil-producing region of the Caspian Sea and have similar environmental problems. [Kelley-Hinds] has extensive experience in cleaning up territories polluted by the waste products of petroleum extraction and refining. The company proposes to design and build a common system for the collection, transportation and treatment of all waste formed in petroleum extraction and refining within the boundaries of the Apsheron Peninsula and its surrounding waters. A special technology for doing the work on land will make it possible to turn the waste into recycled products for use in construction—for example, in road building.

Protection of the Caspian is a problem of more than local significance, and one country alone cannot solve it—that is something on which all the conference participants agreed. It is necessary to set up not only a regional fund for saving the Caspian but an international fund, as well, pooling the efforts of the world community. I am wholeheartedly “in favor.” But let me interject the reminder that this is just combating the consequences. We must learn how to anticipate events, not by intervening in natural processes but by gearing our actions to be commensurate with them. In ecology, as in medicine, the principle “do no harm” must become fundamental.

The conference on the Caspian's problems is over. It adopted a package of proposals for developing a comprehensive program for protecting the world's largest lake. A preparatory committee was formed for organizing a Supreme Caspian Council. This nongovernmental agency will unite the efforts of scientists and specialists to stabilize and improve the environmental situation.

History of Caspian Sea Water Diversion Schemes Examined

91WN0707A Moscow KOMSOMOLSKAYA PRAVDA
in Russian 10 Aug 91 p 3

[Article by A. Bushev; “Why Does the Volga Still Flow Into the Caspian Sea?”]

[Text] There is more and more of the Caspian Sea.

The island Kizyl-Su—Krasnaya Voda is a heavenly place. There is no vegetation here—just sand and water. The boat to Krasnovodsk was delayed, so I wandered until I stumbled upon a lonely gravesite. An austere obelisk with a cross, unusual to the eye in the depths of this Muslim land, and in place of a fence, a time-rusted anchor chain, and withered flowers. The date of interment, carved into the stone, and the Russian name suggested an answer: In the seaside sand, on a God-forsaken Turkmen shore rests the lonely dust of Peter the Great's people...

In 1714, the indefatigable Peter issued an ukase to send an expedition to Asia. As I understand it, the Petersburgers comprising this expedition were the first river “diverters” in the history of the Russian empire.

Thus, Prince Aleksandr Bekovich-Cherkasskiy, lieutenant of the Preobrazhenskiy Regiment, led an expedition whose duties included the destruction of a dam erected on the Amu-Darya by residents of Khiva, thereby directing that river's waters into the Caspian Sea. This idea was “handed off” to Peter by one of the numerous messengers sent to the “northern capital,” a man by the name of Khodzha Nepes, a Caspian Turkmen by birth. Khodzha Nepes also reported on “gold in the sand,” with which the Amu-Darya was supposedly rich. Naturally, the “white tsar” was intrigued by both the gold and moreover by the possibility of “opening for Russia a new trade route to India,” a water route, by means of “diverting” the Amu-Darya into the Caspian Sea.

Cherkasskiy's expedition lasted three years, and the “diversion” did not take place—it was resisted by the ruler of Khiva, who could not appreciate the worth of Peter's idea of the route to India. The members of the Russian expedition lost their heads, and the Amu-Darya all the same went on pouring its waters into the Aral Sea. Back then, in the early 18th century, the rulers of Central Asia still said “No!” to the rulers from the center. Incidentally, everything now is moving toward that, although still fresh in our memories are the years and decades when the traditions of the past were dismissed as useless, and khans of all ranks were more than ready to “salute” if suddenly some “older brother” from the capital let loose yet another “idea.” It seems, though, that the ones which were implemented will leave their mark for a long time.

Incidentally, the giant Caspian influx didn't begin today or yesterday. The problem has been in the air for decades, but the thunderclap came last June. The Caspian Sea had been gaining water, but slowly, by centimeters, as if it were warning: Prepare yourselves! No one heeded the warning. Today's matters are more important than yesterday's. After “stretching” the water line 1 and ½ meters over 10 years, in two weeks during the first month of summer, ancient Khazar jumped by another 30 centimeters! And that, of course, was the last straw. The shores, and everything that had been built on them were “swimming,” in Azerbaijan, Turkmenia, Dagestan, Kazakhstan... Housing and factories, railroad tracks and electric power lines, moorings, and resorts.

The “last straw” worked: An international conference hurriedly gathered in Baku and unanimously adopted a resolution on the “consolidation and coordination of the intellectual, productive, and financial potential of the states of the Caspian Sea region.” In a word, they resolved to form some sort of Caspian Sea High Council.

When will it start to work, in six months or a year? For now, not one single soul knows. And now over 500 residences have been inundated in the Lenkoranskiy Rayon of Azerbaijan, while in Turkmenia in some places the shore line has been moved back over 40 kilometers; oil drilling wells and exploratory wells are in the water. Near Krasnovodsk, in the village of Ufra, an oil storage

tank is on the verge of going under; the contents of sewage treatment facilities are about to float on the sea's surface...

The Caspian Atlantis—the residents of the shore villages and their local soviets—have tried to fight the sea on their own. They hired bulldozer operators “on the take” with their hard-earned money, and they mounded dikes out of sand. These had the same effect as, for example, protecting yourself from a hurricane with a fishing net. The dikes stayed in place; the sea moved inexorably onward. The total lack of effectiveness of the bulldozer venture was soon understood and people started to try to move houses further away, to dry land. They got cranes and other equipment; cables were secured. The poorer ones were lucky, the ones with wooden houses, that is, without a foundation. Owners of brick houses left burdened only with bags and baggage.

What could the village councils do to help? Nothing. Loans from the rayispolkom? But what can you get for money in the sticks? Bricks, roof slate, glass, wallpaper? In Lenkoranskiy Rayon it decided all the same to allocate land plots to the victims; in Bekdash, Turkmenia, a relocation plan exists on the conceptual level for now.

Everyone sank and swam on his own. Managers thought about departmental property above all. Messengers were sent to the centers, both union and republic, for assistance, for money, for reserves. They beat down the doors of the ministries, persuading that it was better to spend one ruble now than ten tomorrow. Sometimes their words had an effect.

Yet the main thing is that no one can say for sure how the Caspian Sea will behave. Will the Cheleken peninsula become an island? And if so, when? And if this happens, isn't it time to think about how the oil drillers are going to communicate with the mainland? The asphalt road is sagging even now; a 10-kilometer section of water pipe is under water. There are no predictions. Just recently, USSR Goskomgidromet [State Committee for Hydrometeorology] optimistically responded to inquiries: The sea level is on the verge of stabilizing.

But there was no higher ground to move to, and the alarm was sounded. The hastily-created commissions now make assurances: apparently, the water will continue to come up for 20 years, and the sea level will rise by two-three more meters! Consequently, millions, hundreds of millions of rubles will be required to eliminate the natural disaster. But where to obtain these millions? Sovereignty of the republics is one thing, but all the same there's no getting around the need for the center. It will be necessary to go begging for money. According to the economists' calculations, millions will be required, just for the priority jobs, and that is for Turkmenia alone...

But what befell the Caspian Sea? After all, quite recently—and many still remember this—the country's Minvodkhoz [Ministry of Land Reclamation and Water Resources] quite publicly and with great ceremony saved it from the opposite ailment—getting too shallow. “The

unfortunate Volga has been used up on irrigation,” the advocates of all possible river diversions proclaimed as their main thesis at that time. “So there is no water in the Caspian Sea. Nor will there be. And the Northern Dvina has to be turned around, and Onega to boot. Just give us the money.” Peter's dream of reversing the Amu-Darya pales by comparison! Dozens of the country's institutes have busted their brains over how to fill the lowering Caspian Sea.

As a temporary measure, for the time being it was decided to cut off the Kara-Bogaz-Gol gulf from the sea; the gulf, incidentally, was discovered by the Bekovich expedition. Many have read Chukovskiy's “Kara-Bugaz,” and many will recall the quotation of the document sent by the Russian naval lieutenant Ignatiy Zherebtsov to the hydrographic administration: “The water of the Caspian Sea rushes into the gulf with incredible force and speed, as if plummeting into an abyss. That is the reason for the gulf's name: Kara-Bugaz in Turkmen means ‘the black mouth.’ Like a mouth, the gulf continuously sucks the sea's waters. This latter condition gave cause to suppose that at the eastern shore of the gulf, the water flows off in a powerful ‘underground river,’ either to the Aral Sea or to the Arctic Ocean.”

A sober-minded person would scarcely believe that at the Water Problems Institute of the USSR Academy of Sciences they would think the same way about an underground river as did Ignatiy Zherebtsov. Yet in 1980, the opening of the black mouth was corked up by a solid dike. According to the lowest calculations, the losses from this man-made metamorphosis due to the change in the status of the enormous body of water are now put at 80 billion rubles (incidentally, that is about the same amount the diverters requested to make the northern rivers flow south). And underestimated were the many millions of tons of chemical production in Bekdash, where Glauber salts and other valuable products are mined; the gulf evaporated very rapidly, and a gigantic salt desert formed in its place. Winds spread the salt many hundreds of kilometers around, depositing them in the fertile fields of the Stavropol and Orenburg areas...

It goes without saying that the idea of closing the gulf has had a less than delighted reception in Turkmenia. Scientists from the Turkmen SSR Academy of Sciences attempted in their scholarly articles to explain the senselessness of such a step (naturally, no one published in the general press). But the nation's Minvodkhoz was closer to the union government and found it easier to be insistent. And when the center said, “That's an order!,” the then-leadership of Turkmenia replied “Yes, sir!” The bulldozers went into the battle. And despite the fact that measurements of the sea level had indicated a rise for two years, no one was interested any longer; the deal was done, and the gulf turned into a lake.

What was it that the Turkmen scientists had warned about when they asserted that closing up Kara-Bogaz was a mistake? They insisted that the great Russian Volga

river, for all its greatness, did not have any significant effect on the level of the Caspian Sea. The crux of the matter lies elsewhere—the bowels under the sea are unsettled! Powerful tectonic processes first raise, then lower the sea floor, and the sea level varies accordingly. And this cycle takes 70-120 years. The regular floor settling was completed in 1977 and the reverse process began while the intensive preparations for closing the gulf were under way. That is the secret. By the way, the people living along the shore of the Caspian Sea have known of its quirks for ages.

And the secret of the black mouth is simple: The gulf has always served as a unique drainage system, collecting excess water and evaporating it in the hot Turkmen sun. Of course, the gulf could not completely neutralize the variation of the sea floor, but it did substantially ameliorate the underground element.

The voices are heard, "The dikes at the mouth of the gulf must be blown up immediately!" That's already impossible. The fact is that people have already settled firmly on the dry bed of the former gulf. Explode the dike, and everyone drowns. It can't be blown up, but...it must be. For, as one Turkmen professor put it, "We are in the position of people who have only one course—to choose the lesser of two evils."

But here's a fresh idea: A canal should be dug from the Caspian to the Aral Sea, and the surplus Caspian water will be shunted to the unfortunate Aral Sea. According to the calculations, this will cost 15 times less than diverting northern rivers. It doesn't seem like a bad idea: One sea has too much water, the other, too little. Why not share? One problem: While we go through the motions, while we design the project, while we get the money and reserves for it, coordinate it, the Caspian Sea will up and start to get shallow again. That's fine, if by that time we have dug only, say, half the canal, but what if we've dug the whole thing?

While this issue was going to press:

A gas discharge from a hole occurred near Cape Rakushchnyy in the Caspian Sea.

A burning torch burst through a 40-meter layer of water and was clearly visible from the shore 15 kilometers away. Specialists still have no method of eliminating the plume. The only thing they were able to do was ignite the poisonous gas. There is hope that because of the minor depth of the exploded hole (500 meters), it is possible that the gas will dissipate rapidly.

In the past, two drillers died as a result of a similar discharge at this same hole.

Lake Baykal To Be Source of Commercial Drinking Water

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14 Aug 91 Union Edition p 2

[Article by staff correspondent V. Svitnev: "Water from Baykal for Sale"]

[Text] Mitsinoku Bank, a major Japanese bank, has initiated a project that involves obtaining natural pure water from Lake Baykal. The bank has bought 30,000 plastic one-liter bottles, which will soon arrive in Irkutsk. According to Aleksandr Suturin, deputy director of the Limnological Institute, in September-October Soviet and foreign tourists in Moscow, Khabarovsk, Leningrad and Vladivostok will for the first time be able to buy the planet's purest water.

Humanity has lost the desire to drink water out of open and closed sources—chlorinated water with a variable chemical makeup that adds neither health nor longevity. Japanese business people, for example, often bring plastic bottles of purified water along with them to the USSR. The French bottle water from Alpine glaciers and sell it in Europe, America, Japan and the Far East. Water firms hold competitors on the remote accesses to the market, for pure water today is a strategic resource and a real gold mine.

Baykal holds one-fifth of all of it that exists on the planet. Since many lakes in the Northern Hemisphere and underground waters in Europe and North America have been highly polluted by human beings, and many bodies of water in South Asia, Africa and South America are polluted with bacteria, viruses and parasites, the people on earth are increasingly turning their eyes toward the Siberian "sacred sea."

Granted, lately its pure character has been significantly spoiled by two processes—immoderate economic activity on its shores and, as some scientists now believe, the equally inflated fears of the "greens" concerning the premature death of venerable Baykal. But what can you do with them—anxious people have taken the pain of the silent giant onto themselves. After all, it is said that the Baykal omul have drastically declined in size over the past few decades, that the population of the water's principal cleaner—the small epishura crustacean—has declined by half, and that the threat of ecological disaster looms.

Speaking recently to some foreign scientists, Mikhail Grachev, director of the Irkutsk Limnological Institute, said that, contrary to the claims of the "greens" and journalists, not a single one of the 2,000 endemic species in Baykal has been recorded as extinct, and that, despite the presence of localized chemical pollution, no qualitative changes in the lake have yet been recorded.

In his opinion, the situation is fully capable of being improved. One merely must have a thorough knowledge of the level of the lake's pollution with toxicants and the

potential of its biota for purifying the water. In essence, research along these lines is already being done by the institute, enlisting foreign scientists who have the necessary apparatus for subtle analyses. The scientific information that has been obtained through its use has made it possible to draw the conclusion that Baykal's water, when taken at a depth of 500-1,000 meters, is the purest in the world. Purer than the benchmark Chukchi Sea. The Irkutsk limnologists have sent out samples of that water for analysis to dozens of laboratories throughout the world, and they all have unequivocally confirmed the Irkutsk scientists' conclusions. That means, in their opinion, that the lake has not yet lost the ability to cleanse itself.

After testing deep Baykal water following the analyses, a Japanese ecologist and professor stated that the only time he had drunk such water was many years ago from a well in his native village, when he was a child.

According to the figures of foreign-trade organizations, firms not just in Japan but also in Taiwan, Britain, France and the United Arab Emirates are interested in purchasing water from Baykal in large quantities. There is a huge market in China, the Republic of Korea, Thailand and Vietnam. Finally Baykal has been seen as it always was seen and is still seen by Girgoriy Galaziy, a corresponding member of the USSR Academy of Sciences and one of its prominent researchers and defenders: as the largest reservoir of pure water on the planet, as a bottomless well capable of providing water to everyone. Incidentally, the draft general concept of a state program for scientific and technological progress drawn up by the region's scientists at the initiative of M. Grachev is called just that: "Baykal Is the Planet's Well."

The developers of this concept claim that by selling just one-twentieth of the pure water that the notorious Baykalsk Pulp and Paper Combine swallows up in the course of a year, it would be possible to earn up to \$6 billion. In contrast, the pulp and paper combine's income from selling pulp is 200 million rubles. But whereas the combine continues to depress life in the adjoining Baykal waters, eight water-bottling plants, say, at 300 million bottles or more a year each, would provide money that no one has today for restoring that life, and would make it possible to put economic activity in Buryatia and Irkutsk Oblast on a sound environmental footing and improve the population's living standard. It is proposed that hundreds of thousands of low-priced shares of public stock could be sold so that the Baykal region's inhabitants could receive dividends and gain a vital interest in preserving the lake's purity.

Such a project absolutely must not be undertaken in an offhand fashion; in order not to endanger, even slightly, Baykal's reputation as a source of the purest water, every stage of the project requires scrupulous scientific study. Therefore, what is being considered at present is the establishment of a pilot production plant capable of producing 20 million bottles of water a year, where in two years the necessary information would be gathered

for developing as large a program as desired. That requires \$8 million, or R28 million, right now. The outlays would be recouped in two years, at the most. Despite the fact that they still consider their own "dirty" output to be the region's chief source of income, the region's economic managers would still like to become sponsors of the project to one degree or another.

The limnologists have proposed creating an interregional consortium known as Planet's Well that would include the governments of Russia and Buryatia, the Irkutsk Oblast Soviet Executive Committee, and enterprises, banks and commercial and research organizations from the Baykal region. They see its purpose as the large-scale entry into the domestic and foreign markets with deep Baykal water. The money earned would go for establishing a multipurpose Baykal fund, protecting the lake against pollution, developing environmentally clean technologies within the area from which the lake draws its water, developing up-to-date education, and carrying out international research programs.

Russia's Council of Ministers recently allocated R2 million to the Irkutsk Limnological Institute. That special-purpose contribution from the republic's government will go for enabling scientists to say where the purest water in Baykal is located and how it can be taken from that place and bottled for sale.

In order to speed up implementation of the "Baykal Is the Planet's Well" program, Russia's government is prepared to adopt a special decree.

Ukrainian Law on Environmental Protection

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24, 25 Jul 91

[Law of the Ukrainian Soviet Socialist Republic on the Protection of the Natural Environment]

[24 Jul pp 1-2]

[Text] The protection of the natural environment, efficient utilization of natural resources, and maintenance of ecological safety for man's vital activity—these are inalienable conditions for the Ukraine's stable economic and social development.

For this purpose the Ukrainian SSR pursues on its territory an ecological policy aimed at preserving an environment safe for the existence of animate and inanimate nature, protecting the population's life and health against a negative effect brought about by the pollution of the natural environment, attaining a harmonious interaction of society and nature, and conserving, efficiently utilizing, and reproducing natural resources.

This law determines the legal, economic, and social principles of organizing the protection of the natural environment in the interests of present and future generations.

Section I. GENERAL PROVISIONS

Article 1. Tasks of Legislation on the Protection of the Natural Environment

The regulation of relations in the field of protection, utilization, and reproduction of natural resources, maintenance of ecological safety, and prevention and elimination of the negative effect of economic and other activities on the natural environment, as well as the preservation of natural resources, the genetic stock of animate nature, landscapes, other natural complexes, unique territories, and natural facilities connected with the historical and cultural heritage, is the task of legislation on the protection of the natural environment.

Article 2. Ukrainian SSR Legislation on the Protection of the Natural Environment

Relations in the field of protection of the natural environment in the Ukrainian SSR are regulated by this law, as well as by land, water, and forest legislation, by legislation on mineral resources, on the protection of atmospheric air, and on the protection and utilization of the plant and animal world, and by other special legislation worked out in accordance with the above law.

Article 3. Basic Principles of Protection of the Natural Environment

The following are the basic principles of protection of the natural environment:

- a) priority of the requirements for ecological safety and obligatory observance of ecological standards, norms, and limits of utilization of natural resources during the performance of economic, managerial, and other activities;
- b) ensuring an ecologically safe environment for people's life and health;
- c) preventive nature of measures for the protection of the natural environment;
- d) ecologization of material production on the basis of comprehensive solutions of problems concerning the protection of the natural environment, utilization and reproduction of recovered natural resources, and the widest introduction of the latest technologies;
- e) preservation of the spatial and specific diversity and integrity of natural facilities and complexes;
- f) scientifically substantiated coordination of society's ecological, economic, and social interests on the basis of a combination of interdisciplinary knowledge of ecological, social, natural, and technical sciences and forecasting of the state of the natural environment;
- g) obligatory ecological assessment;

h) glasnost and democratism during the adoption of decisions, the realization of which affects the state of the natural environment and the shaping of the population's ecological outlook;

i) scientifically substantiated standardization of the effect of economic and other activities on the natural environment;

j) no charge for a general and a charge for a special utilization of natural resources for economic activity;

k) collection of a charge for the pollution of the natural environment and deterioration in the quality of natural resources and compensation for the damage resulting from a violation of legislation on the protection of the natural environment;

l) solution of problems concerning the protection of the natural environment and utilization of natural resources with due regard for the degree of anthropogenic change in territories and the combined impact of factors negatively affecting the ecological situation;

m) combination of incentive and responsibility measures in the field of protection of the natural environment;

n) solution of problems concerning the protection of the natural environment on the basis of extensive intergovernmental cooperation.

Article 4. Right of Ownership of Natural Resources

The natural resources of the Ukrainian SSR are the property of the Ukrainian people, who have the right to own, utilize, and dispose of the republic's natural resources.

The sovereignty of the Ukrainian people in the field of protection of the natural environment and utilization of natural resources is realized on the basis of the Ukrainian SSR Constitution both directly, by holding referendums, and through republican bodies of state power in accordance with Ukrainian SSR legislation.

On behalf of the Ukrainian people the Ukrainian SSR Supreme Soviet exercises the right to dispose of natural resources.

Article 5. Facilities Subject to Legal Protection of the Natural Environment

The following are subject to state protection and regulation of utilization on Ukrainian SSR territory: the natural environment as the totality of natural and natural-social conditions and processes; natural resources, both those drawn into the economic turnover and those not utilized in the national economy during this period (land, mineral resources, water, atmospheric air, forests, other vegetation, and the animal world), landscapes, and other natural complexes.

Territories and facilities of the Ukrainian SSR nature reserve and other territories and objects determined in accordance with Ukrainian SSR legislation are subject to special state protection.

People's health and life are also subject to state protection against the negative effect of an unfavorable ecological situation.

Article 6. State Ecological Programs

For the purpose of execution of efficient and purposeful activity by the Ukrainian SSR for the organization and coordination of measures for the protection of the natural environment, maintenance of ecological safety, and efficient utilization and reproduction of natural resources over a long-term period, state republican, intergovernmental, regional, local, and other territorial programs are being developed and adopted.

The procedure for the development of state ecological programs is determined by the Ukrainian SSR Cabinet of Ministers.

Article 7. Training and Education in the Field of Protection of the Natural Environment.

A rise in society's ecological standard and the vocational training of specialists is ensured by general compulsory comprehensive training and education in the field of protection of the natural environment, including in preschool children's institutions and in the system of general secondary, vocational, and higher education and for improvement in skills and retraining of personnel.

Ecological knowledge is a compulsory skill requirement for all officials whose activity is connected with the utilization of natural resources and leads to an effect on the state of the natural environment.

Especially determined higher and vocational educational institutions train specialists in the field of protection of the natural environment and utilization of natural resources with due regard for public needs.

Article 8. Scientific Research

Systematic comprehensive scientific research on the natural environment and natural resources for the purpose of developing the scientific principles of their protection and efficient utilization and maintenance of ecological safety is conducted in the Ukrainian SSR.

The Ukrainian SSR Academy of Sciences and the Ukrainian SSR Ministry of Protection of the Natural Environment carry out the coordination and generalization of these research results.

Section II. ECOLOGICAL RIGHTS AND DUTIES OF CITIZENS

Article 9. Ecological Rights of Ukrainian SSR Citizens

Every Ukrainian SSR citizen has the right to:

a) a natural environment safe for his life and health;

b) participation in the discussion of drafts of legislative acts, materials concerning the siting, construction, and reconstruction of facilities that can negatively affect the state of the natural environment, and submission of proposals on these matters to state and economic bodies, institutions, and organizations;

c) participation in the development and implementation of measures for the protection of the natural environment and efficient and comprehensive utilization of natural resources;

d) general and special utilization of natural resources;

e) unification into public nature protection formations;

f) acquisition, in accordance with the established procedure, of full and reliable information on the state of the natural environment and its effect on the population's health;

g) participation in a public ecological assessment;

h) ecological education;

i) institution of court actions against state bodies, enterprises, establishments, organizations, and citizens for compensation for the damage done to their health and property owing to the negative effect on the natural environment.

Ukrainian SSR legislation can also determine other ecological rights of the republic's citizens.

Article 10. Guarantees of Citizens' Ecological Rights

Citizens' ecological rights are ensured by:

a) implementation of large-scale state measures to maintain, restore, and improve the state of the natural environment;

b) obligation of ministries, departments, enterprises, institutions, and organizations to carry out technical and other measures to prevent the harmful effect of economic and other activities on the natural environment and to fulfill ecological requirements during the planning and distribution of productive forces and the construction and operation of national economic facilities;

c) participation of public associations and citizens in activity for the protection of the natural environment;

d) exercise of state and public control over the observance of legislation on the protection of the natural environment;

e) compensation, in accordance with the established procedure, for the damage done to citizens' health and property owing to a violation of legislation on the protection of the natural environment;

f) inevitability of the responsibility for a violation of legislation on the protection of the natural environment.

Activity impeding the exercise of citizens' right to a safe natural environment and their other ecological rights is subject to termination in accordance with the procedure established by this law and other Ukrainian SSR legislation.

Article 11. Protection of Ukrainian SSR Citizens' Rights in the Field of Protection of the Natural Environment

The Ukrainian SSR guarantees its citizens the realization of ecological rights granted to them by legislation.

Soviets of people's deputies and especially authorized state bodies of management in the field of protection of the natural environment and utilization of natural resources must provide all-around assistance to citizens in the performance of nature protection activity, take into consideration their proposals for improving the state of the natural environment and efficient utilization of natural resources, and draw citizens into participation in the solution of problems concerning the protection of the natural environment and utilization of natural resources.

Violated citizens' rights in the field of protection of the natural environment should be restored and their protection is carried out judicially in accordance with Ukrainian SSR legislation.

Article 12. Citizens' Duties in the Field of Protection of the Natural Environment

Ukrainian SSR citizens must:

- a) conserve nature and protect and efficiently utilize its resources in accordance with the requirements of legislation on the protection of the natural environment;
- b) carry out activities with the observance of the requirements for ecological safety, other ecological normatives, and limits of utilization of natural resources;
- c) not violate ecological rights and legitimate interests of other subjects;
- d) make payments for a special utilization of natural resources and pay fines for ecological infringements of the law;
- e) compensate for the damage done by pollution and other negative effects on the natural environment.

Ukrainian SSR citizens must also fulfill other duties in the field of protection of the natural environment in accordance with Ukrainian SSR legislation.

Section III. POWERS OF SOVIETS OF PEOPLE'S DEPUTIES IN THE FIELD OF PROTECTION OF THE NATURAL ENVIRONMENT

Article 13. Competence of the Ukrainian SSR Supreme Soviet in the Field of Protection of the Natural Environment

The following pertain to the exclusive competence of the Ukrainian SSR Supreme Soviet in the field of regulation

of relations concerning the protection of the natural environment in accordance with the Ukrainian SSR Constitution:

- a) determination of basic directions in state policy in the field of protection of the natural environment;
- b) approval of state ecological programs;
- c) determination of legal principles of regulating relations in the field of protection of the natural environment, including concerning the adoption of decisions on limiting, suspending (temporarily), or terminating the activity of enterprises and facilities if they violate legislation on the protection of the natural environment;
- d) determination of the powers of soviets of people's deputies and the procedure for the organization and activity of bodies of management in the field of protection of the natural environment, utilization of natural resources, and maintenance of ecological safety;
- e) establishment of the legal regime of zones in an emergency ecological situation and of the status of victimized citizens and declaration of such zones on the republic's territory.

The Ukrainian SSR Supreme Soviet, in accordance with the Ukrainian SSR Constitution, can also accept for consideration other problems concerning the protection of the natural environment, utilization of natural resources, and maintenance of ecological safety.

Article 14. Competence of the Crimean ASSR Supreme Soviet

The Crimean ASSR Supreme Soviet in the field of regulation of relations concerning the protection of the natural environment:

- a) determines the procedure for the organization and activity of bodies of management in the field of protection of the natural environment and utilization of natural resources;
- b) determines the powers of soviets of people's deputies in the field of protection of the natural environment and efficient utilization of natural resources;
- c) ensures the realization of Ukrainian SSR ecological policy and citizens' ecological rights and interests;
- d) approves ecological programs;
- e) organizes the study of the natural environment;
- f) creates and determines the status of extrabudgetary and reserve, including currency, funds for financing programs and other measures for the protection of the natural environment;
- g) adopts decisions on organizing territories and facilities of the nature reserve of local significance and other territories and facilities subject to special protection and establishes their additional categories;

h) suspends the economic activity of enterprises, institutions, and organizations subordinate to the Crimean ASSR, as well as limits or suspends (temporarily) the activity of enterprises, institutions, and organizations not subordinate to Crimean ASSR bodies of power, if they violate legislation on the protection of the natural environment;

i) if necessary, establishes ecological safety norms stricter than those in effect throughout Ukrainian SSR territory.

The Crimean ASSR Supreme Soviet also exercises other powers not included by Ukrainian SSR legislation in the competence of Ukrainian SSR republican bodies of state power.

Article 15. Powers of Local Soviets of People's Deputies in the Field of Protection of the Natural Environment

Local soviets of people's deputies bear responsibility for the state of the natural environment on their territory and within their competence:

- a) ensure the realization of Ukrainian SSR ecological policy and citizens' ecological rights;
- b) give consent to the siting of enterprises, institutions, and organizations on their territory;
- c) approve, with due regard for ecological requirements, designs for the layout and construction of settlements, their long-term plans, and models of industrial centers;
- d) issue and revoke permits for an isolated special utilization of natural resources of local significance;
- e) approve local ecological programs;
- f) organize the study of the natural environment;
- g) create and determine the status of extrabudgetary and reserve, including currency, funds for financing programs and other measures for the protection of the natural environment;
- h) if necessary, organize an ecological assessment;
- i) provide information on the state of the natural environment to the population;
- j) organize work on the elimination of ecological consequences and accidents and enlist enterprises, institutions, and organizations, irrespective of their subordination and property forms, as well as citizens, in this work;
- k) adopt decisions on organizing the territories and facilities of the nature reserve of local significance and other territories subject to special protection;
- l) exercise control over the observance of legislation on the protection of the natural environment;
- m) suspend the economic activity of enterprises, institutions, and organizations of local subordination, as well as limit or suspend (temporarily) the activity of enterprises,

institutions, and organizations not subordinate to the soviet of people's deputies, if they violate legislation on the protection of the natural environment;

n) coordinate the activity of appropriate, especially authorized, state bodies of management in the field of protection of the natural environment and utilization of natural resources on the territory of the local soviet of people's deputies.

Local soviets of people's deputies can also exercise other powers in accordance with Ukrainian SSR legislation.

Section IV. POWERS OF BODIES OF MANAGEMENT IN THE FIELD OF PROTECTION OF THE NATURAL ENVIRONMENT

Article 16. Management in the Field of Protection of the Natural Environment

Management of the protection of the natural environment consists in the performance in this sector of functions of observation, research, ecological assessment, control, forecasting, programming, information, and other executive activities.

State management in the field of protection of the natural environment is carried out by the Ukrainian SSR Cabinet of Ministers, by soviets of people's deputies, and by their executive bodies, as well as by state bodies for the protection of the natural environment and utilization of natural resources especially authorized for this, and by other state bodies in accordance with Ukrainian SSR legislation.

The Ukrainian SSR Ministry of Protection of the Natural Environment, its local bodies, and other state bodies, in the competence of which Ukrainian SSR and Crimean ASSR legislation includes the performance of the indicated functions, are especially authorized state bodies of management in the field of protection of the natural environment and utilization of natural resources in the republic.

Public management in the field of protection of the natural environment is carried out by public associations and organizations, if such an activity is provided for by their charters registered in accordance with Ukrainian SSR legislation.

Realization of legislation, control over the observance of the requirements for ecological safety, and ensuring the implementation of efficient and comprehensive measures for the protection of the natural environment, efficient utilization of natural resources, and attainment of coordination in the actions of state and public bodies in the field of protection of the natural environment are the goals of management in the field of protection of the natural environment.

Article 17. Competence of the Ukrainian SSR Cabinet of Ministers in the Field of Protection of the Natural Environment

The Ukrainian SSR Cabinet of Ministers in the field of protection of the natural environment:

- a) realizes the ecological policy determined by the Ukrainian SSR Supreme Soviet;
- b) ensures the development of state republican, interstate, and regional ecological programs;
- c) coordinates the activity of ministries, departments, and other Ukrainian SSR institutions and organizations concerning matters connected with the protection of the natural environment.
- d) establishes the procedure for the formation and utilization of the republican extrabudgetary fund for the protection of the natural environment;
- e) establishes the procedure for the development and approval of ecological norms and limits of utilization of natural resources, of the discharge and dumping of pollutants into the natural environment, and of waste disposal;
- f) establishes the procedure for the determination of the charge and its maximum amounts for the use of natural resources, pollution of the natural environment, waste disposal, and other types of harmful effects on it;
- g) adopts decisions on organizing the territories and facilities of the nature reserve fund of republican significance;
- h) organizes citizens' ecological training and education;
- i) adopts decisions on suspending (temporarily) or terminating the activity of enterprises, institutions, and organizations, irrespective of property forms and subordination, if they violate legislation on the protection of the natural environment;
- j) directs Ukrainian SSR foreign relations in the field of protection of the natural environment.

The Ukrainian SSR Cabinet of Ministers can also exercise other powers in accordance with Ukrainian SSR legislation.

Article 18. Competence of the Crimean ASSR Government in the Field of Protection of the Natural Environment

The Crimean ASSR Government in the field of protection of the natural environment on its territory:

- a) realizes Ukrainian SSR and Crimean ASSR legislation in the field of protection of the natural environment;
- b) organizes the development of ecological programs;
- c) coordinates the activity of ministries, departments, enterprises, institutions, and organizations in the Crimean ASSR concerning matters connected with the protection of the natural environment, irrespective of property forms and subordination;

d) establishes the procedure for the formation and utilization of the extrabudgetary fund for the protection of the natural environment in the Crimean ASSR;

e) coordinates the siting of enterprises, institutions, and organizations;

f) organizes management and control in the field of protection of the natural environment;

g) determines, in accordance with the established procedure, norms of the charge and amounts of payments for the pollution of the natural environment and waste disposal;

h) by representation of bodies of the Ukrainian SSR Ministry of Protection of the Natural Environment approves for enterprises, institutions, and organizations limits of utilization of natural resources with the exception of natural resources of republican significance, limits of the discharge and dumping of pollutants into the natural environment, with the exception of discharge or dumping leading to the pollution of natural resources of republican significance and the natural environment outside Crimean ASSR territory, and limits of waste disposal;

i) organizes a state ecological assessment of facilities being established or functioning on Crimean ASSR territory;

j) coordinates current and long-term plans for the work of enterprises, institutions, and organizations on matters concerning the protection of the natural environment and utilization of natural resources;

k) organizes the elimination of ecological consequences of accidents and enlists enterprises, institutions, and organizations, irrespective of subordination and property forms, as well as citizens, in it;

l) provides systematic and current information on the state of the natural environment for the population, enterprises, institutions, and organizations;

m) organizes citizens' ecological education and training.

The Crimean ASSR Government can also exercise other powers not within the competence of Ukrainian SSR republican bodies of state management.

Article 19. Competence of Executive and Administrative Bodies of Local Soviets of People's Deputies in the Field of Protection of the Natural Environment

Executive and Administrative Bodies of Local Soviets of People's Deputies in the field of protection of the natural environment within their competence:

a) realize the decisions of appropriate soviets of people's deputies;

b) coordinate the activity of local bodies of management, enterprises, institutions, and organizations located on

the territory of the local soviet of people's deputies, irrespective of property forms and subordination;

c) organize the development of local ecological programs;

d) determine, in accordance with the established procedure, norms of the charge and amounts of payments for the pollution of the natural environment and waste disposal;

e) by representation of bodies of the Ukrainian SSR Ministry of Protection of the Natural Environment approve for enterprises, institutions, and organizations limits of utilization of natural resources, with the exception of resources of republican significance, limits of the discharge and dumping of pollutants into the natural environment, with the exception of discharge and dumping leading to the pollution of natural resources of republican significance, or of the natural environment outside the territory of this soviet of people's deputies, and limits of waste disposal;

f) organize the collection, processing, recovery, and burial of industrial, household, and other waste on their territory;

g) form and use local extrabudgetary funds for the protection of the natural environment;

h) coordinate current and long-term plans for the work of enterprises, institutions, and organizations on matters concerning the protection of the natural environment and utilization of natural resources;

i) provide systematic and current information on the state of the natural environment and on the sick rate among the population for the population, enterprises, institutions, organizations, and citizens;

j) organize citizens' ecological education and training;

k) adopt decisions on organizing the territories and facilities of the nature reserve of local significance.

Executive and administrative bodies of soviets of people's deputies can also exercise other powers in accordance with Ukrainian SSR legislation.

Article 20. Competence of Especially Authorized Bodies of State Management in the Field of Protection of the Natural Environment and Utilization of Natural Resources

The following pertain to the competence of the Ukrainian SSR Ministry of Protection of the Natural Environment:

a) overall management in the field of protection of the natural environment in the republic; implementation of a uniform scientific and technical policy on matters concerning the protection of the natural environment and utilization of natural resources; coordination of the activity of ministries, departments, enterprises, institutions, and organizations in this field;

b) state control over the utilization and protection of land, mineral resources, surface and underground water, atmospheric air, forests, other vegetation, the animal world, the marine environment, and natural resources of territorial waters, of the continental shelf, and of the exclusive (marine) economic zone of the republic, as well as over the observance of ecological safety norms;

c) organization of the monitoring of the natural environment and establishment and support for the work of the republican ecological information system;

d) approval of norms and rules and participation in the elaboration of standards for regulating the utilization of natural resources and the protection of the natural environment against pollution and other harmful effects;

e) state ecological assessment;

f) acquisition free of charge of information necessary for the fulfillment of the tasks entrusted to it from ministries, departments, enterprises, institutions, and organizations;

g) issue of permits for the burial (warehousing) of industrial, household, and other waste, for the discharge of harmful substances into the natural environment, and for a special utilization of natural resources in accordance with Ukrainian SSR legislation;

h) limitation or (temporary) suspension of the activity of enterprises and facilities, irrespective of their subordination and property forms, if their operation is carried out with a violation of legislation on the protection of the natural environment and of the requirements of permits for the utilization of natural resources and with an excess of the limits of discharge and dumping of pollutants;

i) institution of actions for compensation for the damage and losses resulting from a violation of legislation on the protection of the natural environment;

j) preparation of depositions and examination of cases of administrative violations in the field of protection of the natural environment and utilization of natural resources;

k) management of nature reserves and of the Ukrainian SSR Red Book;

l) coordination of the work of other especially authorized bodies of state management in the field of protection of the natural environment and utilization of natural resources;

m) international cooperation on matters concerning the protection of the natural environment, study, generalization, and dissemination of international experience in this field, and organization of the fulfillment of Ukrainian SSR obligations in accordance with international agreements on matters concerning the protection of the natural environment.

The Ukrainian SSR Ministry of Protection of the Natural Environment also performs other functions in

accordance with the statute on it approved by the Ukrainian SSR Cabinet of Ministers.

Special subdivisions, the workers of which are given the right to wear uniforms of a prescribed pattern and to carry firearms, can be established in the system of bodies of the Ukrainian SSR Ministry of Protection of the Natural Environment.

Ukrainian SSR legislation provides for the protection of the honor, dignity, health, and life of workers at special subdivisions of the Ukrainian SSR Ministry of Protection of the Natural Environment and its local bodies.

The decisions of the Ukrainian SSR Ministry of Protection of the Natural Environment on matters pertaining to its competence are obligatory on all enterprises, institutions, and organizations and can be appealed judicially.

The competence of other especially authorized state bodies of management in the field of protection of the natural environment and efficient utilization of natural resources is determined by Ukrainian SSR legislation, as well as by statutes on these bodies approved in accordance with the established procedure.

Article 21. Powers of Public Associations in the Field of Protection of the Natural Environment

Public nature protection associations have the right:

- a) to develop and popularize their nature protection programs;
- b) to form public funds for the protection of nature; in coordination with local soviets of people's deputies, with internal funds and voluntary labor participation of members of public associations, to carry out work on the protection and reproduction of natural resources and the preservation and improvement of the state of the natural environment;
- c) to take part in checks by especially authorized state bodies of management in the field of protection of the natural environment on the fulfillment of nature protection plans and measures by enterprises, institutions, and organizations;
- d) to make a public ecological assessment, to promulgate its results, and to transmit them to bodies authorized to adopt decisions;
- e) to receive, in accordance with the established procedure, information on the state of the natural environment, sources of its pollution, and programs and measures for the protection of the natural environment;
- f) to put forward an initiative for holding republican and local referendums on matters connected with the protection of the natural environment, utilization of natural resources, and maintenance of ecological safety;
- g) to submit proposals on the organization of territories and facilities of the nature reserve to appropriate bodies;
- h) to institute court actions for compensation for the damage done owing to a violation of legislation on the protection of the natural environment, including to citizens' health and to the property of public associations;
- i) to take part in measures of international nongovernmental organizations on matters concerning the protection of the natural environment.

The activity of public associations in the field of protection of the natural environment is carried out in accordance with Ukrainian SSR legislation on the basis of their charters.

Section V. OBSERVATION, FORECASTING, RECORDING, AND INFORMATION IN THE FIELD OF THE NATURAL ENVIRONMENT

Article 22. Monitoring of the Natural Environment

For the purpose of ensuring the collection, processing, preservation, and analysis of information on the state of the natural environment, forecasting its changes, and developing scientifically substantiated recommendations for the adoption of efficient management decisions, a system of state monitoring of the natural environment is being established in the Ukrainian SSR. Observation of the state of the natural environment and its pollution level is carried out by the Ukrainian SSR Ministry of Protection of the Natural Environment, other especially authorized state bodies, and enterprises, institutions, and organizations, the activity of which leads or can lead to a deterioration in the state of the natural environment.

The indicated enterprises, institutions, and organizations must transmit the analytical materials of their observations free of charge to appropriate state bodies.

The procedure for the state monitoring of the natural environment is determined by the Ukrainian SSR Cabinet of Ministers.

Especially authorized state bodies together with appropriate scientific institutions ensure the organization of short- and long-term forecasting of changes in the natural environment, which should be taken into account during the drafting and fulfillment of programs and measures for the republic's economic and social development, including for the protection of the natural environment, utilization and reconstruction of natural resources, and maintenance of ecological safety.

Article 23. Registers of Natural Resources

In order to record the quantitative, qualitative, and other characteristics of natural resources and the volume, nature, and conditions of their utilization, state registers of natural resources are kept.

State registers are kept in accordance with the procedure determined by the Ukrainian SSR Cabinet of Ministers.

Article 24. State Recording of Facilities Harmfully Affecting the State of the Natural Environment

Facilities that harmfully affect or can affect the state of the natural environment, types and quantity of harmful substances entering the natural environment, and types and extent of harmful physical effects on it are subject to state recording.

Enterprises, institutions, and organizations carry out primary recording in the field of protection of the natural environment and submit appropriate information free of charge to bodies engaged in state recording in this field.

The collection, processing, and submission of consolidated statistical reports on the volumes of discharge and dumping of pollutants, utilization of natural resources, and fulfillment of tasks concerning the protection of the natural environment and other information to appropriate state bodies and the management of ecological certificates are carried out according to a system uniform for the republic in accordance with the procedure determined by the Ukrainian SSR Cabinet of Ministers.

Article 25. Information on the State of the Natural Environment

The Ukrainian SSR Ministry of Protection of the Natural Environment, its local bodies, and other especially authorized state bodies are entrusted with preparing and submitting an annual national report on the state of the natural environment in the republic to the Ukrainian SSR Supreme Soviet, as well as with providing interested state and public bodies, enterprises, institutions, organizations, and citizens with information on the state of the natural environment and on cases and causes of its extreme pollution, with recommendations for measures aimed at reducing its negative effect on natural facilities and the population's health, and [with information on] the consequences and results of elimination of these phenomena, on ecological forecasts, and on the institution of proceedings against guilty persons.

The procedure for the provision of information on the state of the natural environment is determined by the Ukrainian SSR Cabinet of Ministers.

Section VI. ECOLOGICAL ASSESSMENT

Article 26. Obligatory Nature of Ecological Assessment

State, public, and other types of ecological assessments are made in the Ukrainian SSR.

An ecological assessment is obligatory in the process of legislative, investment, management, economic, and other activities affecting the state of the natural environment.

The procedure for making an ecological assessment is determined by Ukrainian SSR legislation.

Article 27. Objects of Ecological Assessment

The following are subject to an ecological assessment:

- a) draft models for the development and distribution of productive forces and for the development of national economic sectors, long-term draft plans for settlements, draft models for regional planning, and other preplan and predraft documents;
- b) technical and economic substantiations and calculations and designs for the construction and reconstruction (expansion and retooling) of enterprises and other facilities, which can negatively affect the state of the natural environment, irrespective of property forms and subordination, including for military purposes;
- c) drafts of instructive-methodological and normative technical acts and documents regulating economic activity negatively affecting the natural environment;
- d) documents on the development of new equipment, technologies, materials, and substances, including those purchased abroad;
- e) materials, substances, products, and economic solutions, systems, and facilities, the introduction or realization of which can lead to a violation of ecological safety norms, to a negative effect on the natural environment, or to the creation of danger for people's health.

Existing ecologically dangerous facilities and complexes, including for military and defense purposes, can be subject to an ecological assessment.

Article 28. State Ecological Assessment

A state ecological assessment is made by expert subdivisions or especially established commissions of the Ukrainian SSR Ministry of Protection of the Natural Environment and its local bodies on the basis of principles of legality, scientific substantiation, comprehensiveness, independence, glasnost, and long-term forecasting.

The following are the tasks of a state ecological assessment:

- a) determination of the ecological safety of economic and other activities, which can have a direct or indirect negative effect on the state of the natural environment at present or in the future;
- b) establishment of the correspondence of predesign, preplan, design, and other solutions to the requirements of legislation on the protection of the natural environment;
- c) evaluation of the completeness and substantiation of envisaged measures for the protection of the natural environment and the population's health made by the Ukrainian SSR Ministry of Protection of the Natural Environment jointly with the Ukrainian SSR Ministry of Health.

Appropriate Ukrainian SSR bodies of state management, representatives of scientific research, planning-design, and other institutions and organizations, of

higher educational institutions, and of the public, and experts of international organizations can be drawn into participation in a state ecological assessment.

Article 29. Obligatory Execution of the Conclusions of a State Ecological Assessment

The conclusion of a state ecological assessment after the approval of the Ukrainian SSR Ministry of Protection of the Natural Environment is obligatory for execution.

A positive conclusion of a state ecological assessment is the basis for opening the financing of all programs and designs.

The realization of programs, designs, and solutions without a positive conclusion of a state ecological assessment is prohibited.

Article 30. Public Ecological Assessment

A public ecological assessment is made by independent groups of specialists on the initiative of public associations, as well as local bodies of power, with their own funds or on a voluntary basis.

A public ecological assessment is made irrespective of a state ecological assessment.

The conclusions of a public ecological assessment can be taken into account by bodies making a state ecological assessment, as well as by bodies interested in the realization of design solutions or operating an appropriate facility.

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Section VII. STANDARDIZATION AND NORM SETTING IN THE FIELD OF PROTECTION OF THE NATURAL ENVIRONMENT

Article 31. Tasks of Standardization and Norm Setting in the Field of Protection of the Natural Environment

Ecological standardization and norm setting are carried out for the purpose of establishing a set of obligatory norms, rules, and requirements for the protection of the natural environment, utilization of natural resources, and maintenance of ecological safety.

Article 32. Ecological Standards

State standards in the field of protection of the natural environment are obligatory for fulfillment and determine the concepts, terms, and regime of utilization and protection of natural resources, methods of control over the state of the natural environment, requirements for preventing the harmful effect of the pollution of the natural environment on people's health, and other matters connected with the protection of the natural environment and utilization of natural resources.

Ecological standards are worked out and put into effect in accordance with the procedure established by Ukrainian SSR legislation.

Article 33. Ecological Normatives

The system of ecological normatives includes:

a) ecological safety normatives (maximum permissible concentrations of pollutants in the natural environment, maximum permissible levels of acoustic, electromagnetic, radiation, and other harmful physical effects on the natural environment, and the maximum permissible content of harmful substances in food products);

b) the maximum permissible discharge and dumping of chemical pollutants into the natural environment and levels of a harmful effect of physical and biological factors.

Ukrainian SSR legislation can establish normatives of utilization of natural resources and other ecological normatives.

Ecological normatives should meet the requirements for the protection of the natural environment and people's health against the negative effect of its pollution.

Normatives of maximum permissible concentrations of pollutants in the natural environment and levels of harmful physical effects on it are uniform for the entire Ukrainian SSR territory.

If necessary, stricter normatives of maximum permissible concentrations of pollutants and of other harmful effects on the natural environment can be established for health-resort, treatment and health-improvement, recreational, and other individual regions.

Ecological normatives are developed and put into effect by the Ukrainian SSR Ministry of Protection of the Natural Environment, the Ukrainian SSR Ministry of Health, and other state bodies authorized for this in accordance with Ukrainian SSR legislation.

Section VIII. CONTROL AND SUPERVISION IN THE FIELD OF PROTECTION OF THE NATURAL ENVIRONMENT

Article 34. Tasks of Control in the Field of Protection of the Natural Environment

Tasks of control in the field of protection of the natural environment lie in ensuring the observance of norms of legislation on the protection of the natural environment by all state bodies, enterprises, institutions, and organizations, irrespective of property forms and subordinations, as well as by citizens.

Article 35. State Control in the Field of Protection of the Natural Environment

State control in the field of protection of the natural environment is exercised by soviets of people's deputies and their executive and administrative bodies, the Ukrainian SSR Ministry of Protection of the Natural Environment, its local bodies, and other especially authorized state bodies.

The utilization and protection of land, mineral resources, surface and underground water, atmospheric air, forests, other vegetation, the animal world, the marine environment, natural resources of territorial waters, of the continental shelf, and of the exclusive (marine) economic zone of the republic, and natural territories and facilities subject to special protection, as well as the state of the natural environment, are subject to state control.

The procedure for the exercise of state control over the protection of the natural environment and utilization of natural resources is determined by this law and other Ukrainian SSR legislation.

Article 36. Public Control in the Field of Protection of the Natural Environment

Public control in the field of protection of the natural environment is exercised by public inspectors for the protection of the natural environment according to the Statute approved by the Ukrainian SSR Ministry of Protection of the Natural Environment.

Public inspectors for the protection of the natural environment:

- a) take part, jointly with workers at bodies of state control, in carrying out sudden inspections and checks on the observance of legislation on the protection of the natural environment and of norms of ecological safety and utilization of natural resources by enterprises, institutions, organizations, and citizens;
- b) carry out checks and prepare reports on violations of legislation on the protection of the natural environment and submit them to bodies of state control in the field of protection of the natural environment and to law enforcement bodies in order to institute proceedings against guilty persons;
- c) give assistance to bodies of state control in the field of protection of the natural environment in activity for the prevention of ecological infringements of the law.

Bodies of public control in the field of protection of the natural environment can also perform other functions in accordance with Ukrainian SSR legislation.

Article 37. Procurator's Supervision of Observance of Legislation on the Protection of the Natural Environment

Supervision of the observance of legislation on the protection of the natural environment is carried out by the Ukrainian SSR General Procurator and procuracy bodies subordinate to him.

During the supervision procuracy bodies use the rights granted to them by Ukrainian SSR legislation, including institution of court or arbitration court actions for compensation for the damage resulting from a violation

of legislation on the protection of the natural environment and for termination of an ecologically dangerous activity.

If necessary, specialized ecological subdivisions can be established in Ukrainian SSR Procuracy bodies.

Section IX. REGULATION OF UTILIZATION OF NATURAL RESOURCES

Article 38. General and Special Utilization of Natural Resources

In the Ukrainian SSR natural resources are utilized by way of a general and a special utilization of natural resources.

Ukrainian SSR legislation guarantees citizens the right of a general utilization of natural resources to meet vitally necessary (esthetic, health-improvement, recreational, material, and so forth) needs free of charge, without assigning these resources to individual persons and granting appropriate permits, with the exception of the limitations provided for by Ukrainian SSR legislation. By way of a special utilization of natural resources citizens, enterprises, institutions, and organizations are granted natural resources for possession, use, or leasing—on the basis of special permits registered in accordance with the established procedure for a charge—for the performance of production and other activities and, in cases provided for by Ukrainian SSR legislation, on preferential terms.

Article 39. Natural Resources of Republican and Local Significance

The following belong to natural resources of republican significance:

- a) territorial and inland marine waters;
- b) natural resources of the continental shelf and of the exclusive (marine) economic zone;
- c) atmospheric air;
- d) underground waters;
- e) surface waters located or used on the territory of more than one oblast;
- f) forest resources of state significance;
- g) natural resources within territories and facilities of the nature reserve of republican significance;
- h) species of plants and animals entered in the Ukrainian SSR Red Book;
- i) mineral resources with the exception of widespread ones.

Ukrainian SSR legislation can also include other natural resources in natural resources of republican significance.

Natural resources not included by Ukrainian SSR legislation in natural resources of republican significance belong to natural resources of local significance.

Article 40. Observance of Ecological Requirements During the Utilization of Natural Resources

Natural resources are utilized by citizens, enterprises, institutions, and organizations with the observance of the obligatory ecological requirements for:

- a) efficient and economical utilization of natural resources on the basis of an extensive application of the latest technologies;
- b) implementation of measures for the prevention of the spoilage, pollution, and depletion of natural resources and a negative effect on the state of the natural environment;
- c) implementation of measures for the reproduction of renewable natural resources;
- d) application of biological, chemical, and other methods of improving the quality of natural resources ensuring the protection of the natural environment and safety for the population's health;
- e) preservation of territories and facilities of the nature reserve, as well as other territories subject to special protection;
- f) performance of economic and other activities without a violation of ecological rights of other persons.

During the utilization of natural resources the fulfillment of other requirements established by this law and other Ukrainian SSR legislation should also be ensured.

Section X. ECONOMIC MECHANISM FOR ENSURING PROTECTION OF THE NATURAL ENVIRONMENT

Article 41. Economic Measures for Ensuring the Protection of the Natural Environment

Economic measures for ensuring the protection of the natural environment provide for:

- a) interconnection of all managerial, scientific-technical, and economic activities of enterprises, institutions, and organizations with an efficient utilization of natural resources and the efficiency of measures for the protection of the natural environment on the basis of economic levers;
- b) determination of sources of financing measures for the protection of the natural environment;
- c) establishment of limits of utilization of natural resources, of the discharge and dumping of pollutants into the natural environment, and of waste disposal;
- d) establishment of norms of the charge and amounts of payments for the utilization of natural

resources, the discharge and dumping of pollutants into the natural environment, waste disposal, and other types of harmful effects;

e) granting of tax, credit, and other privileges to enterprises, institutions, and organizations, as well as to citizens, when they introduce low-waste and energy- and resource-saving technologies and nontraditional types of energy and implement other efficient measures for the protection of the natural environment;

f) compensation, in accordance with the established procedure, for the damage done owing to a violation of legislation on the protection of the natural environment.

Article 42. Financing of Measures for the Protection of the Natural Environment

In the Ukrainian SSR measures for the protection of the natural environment are financed from the Ukrainian SSR republican budget, the Crimean ASSR republican budget, local budgets, funds of enterprises, institutions, and organizations, extrabudgetary funds for the protection of the natural environment, voluntary contributions, and other funds.

Article 43. Charge for a Special Utilization of Natural Resources

The charge for a special utilization of natural resources is established on the basis of norms of the charge and limits of their utilization.

Norms of the charge for the utilization of natural resources are determined with due regard for their occurrence, quality, possibility of reproduction, availability, complexity, productivity, location, possibility of waste processing and recovery, and other factors.

Norms of the charge for the utilization of natural resources, as well as the procedure for its collection, are established by the Ukrainian SSR Cabinet of Ministers.

Limits of utilization of natural resources are established in accordance with the procedure determined by the Crimean ASSR Supreme Soviet and oblast and city (cities of republican subordination) soviets of people's deputies, except for cases when natural resources are of republican significance.

Limits of utilization of natural resources of republican significance are established in accordance with the procedure determined by the Ukrainian SSR Cabinet of Ministers.

Payments for the utilization of natural resources within the established limits are put down to production costs and for an above-limit utilization and lowering of their quality are collected from the profit remaining at the disposal of enterprises, institutions, organizations, or citizens.

Article 44. Charge for Pollution of the Natural Environment

The charge for the pollution of the natural environment is established on the basis of limits of the discharge and dumping of pollutants into the natural environment and disposal of the waste of industrial, agricultural, construction, and other production.

Limits of the discharge and dumping of pollutants into the natural environment, disposal of the waste of industrial, agricultural, construction, and other production, and other types of harmful effects throughout the Crimean ASSR territory, oblasts, cities of republican subordination, or their individual regions are established:

- a) in cases when this leads to the pollution of natural resources of republican significance and territories of other oblasts—by the Ukrainian SSR Ministry of Protection of the Natural Environment;
- b) in other cases—in accordance with the procedure established by the Crimean ASSR Supreme Soviet and by oblast and city (cities of republican subordination) soviets of people's deputies—by representation of the bodies of the Ukrainian SSR Ministry of Protection of the Natural Environment.

The procedure for the establishment of normatives of the charge and collection of payments for the pollution of the natural environment is determined by the Ukrainian SSR Cabinet of Ministers.

Payments by enterprises, institutions, and organizations, as well as by citizens, for the discharge and dumping of pollutants into the natural environment, waste disposal, and other types of harmful effects within the limits are put down to production costs and for exceeding the limits are collected from the profit remaining at the disposal of enterprises, institutions, organizations, or citizens.

The procedure for the establishment of restrictions on the amounts of payments for the pollution of the natural environment is determined by the Ukrainian SSR Cabinet of Ministers.

Article 45. Charge for Deterioration in the Quality of Natural Resources

The charge for the deterioration in the quality of natural resources (decrease in soil fertility, forest productivity, fish productivity of reservoirs, and so forth) as a result of possession and use is established on the basis of normatives.

The procedure for the establishment of normatives of the charge for the deterioration in the quality of natural resources is determined by the Ukrainian SSR Cabinet of Ministers.

Payments by enterprises, institutions, and organizations, as well as by citizens, for the deterioration in the quality of natural resources as a result of possessing and utilizing them are made from the profit remaining at their disposal.

Article 46. Distribution of Payments for the Utilization of Natural Resources and Pollution of the Natural Environment

Payments for the utilization of natural resources enter local budgets, the Crimean ASSR republican budget, and the Ukrainian SSR republican budget and are assigned for the performance of work on the reproduction and maintenance of these resources in proper condition.

Payments for the utilization of natural resources of local significance enter the Crimean ASSR republican budget and local budgets.

A total of 50 percent of the payments for the utilization of natural resources of republican significance enter the Ukrainian SSR republican budget and 50 percent, the Crimean ASSR republican budget and local budgets.

Payments for the pollution of the natural environment enter local (soviets of people's deputies at the base level), oblast, and Crimean ASSR and Ukrainian SSR republican extrabudgetary funds for the protection of the natural environment in a ratio of 70, 20, and 10 percent respectively.

The distribution of funds for the utilization of natural resources entering the republican budget is made by the Ukrainian SSR Supreme Soviet.

The distribution of funds for the utilization of natural resources entering the Crimean ASSR republican budget and local budgets is made by the Crimean ASSR Supreme Soviet and by appropriate oblast and city (cities of republican subordination) soviets of people's deputies by representation of bodies of the Ukrainian SSR Ministry of Protection of the Natural Environment.

Article 47. Funds for Protection of the Natural Environment

Republican and local extrabudgetary funds for the protection of the natural environment are formed for financing measures for the protection of the natural environment.

Local extrabudgetary funds for the protection of the natural environment are formed within a single extrabudgetary fund of an appropriate soviet of people's deputies from:

- a) payments for the pollution of the natural environment;
- b) monetary exactions for a violation of the norms and rules of protection of the natural environment and sanitary norms and rules and for the damage done owing to a violation of legislation on the protection of the natural environment as a result of economic and other activities and an above-limit utilization of natural resources;
- c) specific and other voluntary contributions by enterprises, institutions, organizations, and citizens;

d) proceeds from the sale of property confiscated in accordance with legislation, which was the object of an ecological infringement of the law.

The distribution of payments entering local extrabudgetary funds for the protection of the natural environment is made by the Crimean ASSR Supreme Soviet and by appropriate oblast and city (cities of republican subordination) soviets of people's deputies by representation of bodies of the Ukrainian SSR Ministry of Protection of the Natural Environment.

The republican extrabudgetary fund for the protection of the natural environment is formed from:

a) deductions from local extrabudgetary funds for the protection of the natural environment, the amount of which is determined by the Ukrainian SSR Supreme Soviet;

b) voluntary contributions by enterprises, institutions, organizations, and citizens and other proceeds.

The distribution of funds entering the republican extrabudgetary fund for the protection of the natural environment is made by the Ukrainian SSR Cabinet of Ministers by representation of the Ukrainian SSR Ministry of Protection of the Natural Environment.

Resources of local and republican extrabudgetary funds for the protection of the natural environment can be utilized only for the specific financing of nature protection and resource-saving measures, including scientific research on these matters, as well as measures for reducing the effect of pollution of the natural environment on the population's health.

Statutes on local extrabudgetary funds for the protection of the natural environment are approved by appropriate soviets of people's deputies and on the republican extrabudgetary fund for the protection of the natural environment, by the Ukrainian SSR Cabinet of Ministers.

Other funds for providing incentives for and financing measures for the protection of the natural environment, efficiently utilizing natural resources, and maintaining ecological safety can also be formed in the Ukrainian SSR.

Article 48. Provision of Incentives in the System of Protection of the Natural Environment

In the Ukrainian SSR incentives for an efficient utilization of natural resources and protection of the natural environment are provided by:

a) granting tax privileges to enterprises, institutions, organizations, and citizens, if they realize measures for an efficient utilization of natural resources and protection of the natural environment, change over to low-waste, waste-free, and resource- and energy-saving technologies, organize the production and introduction of cleaning equipment for the recovery of pollutants and

waste processing, as well as devices for controlling the state of the natural environment and sources of discharge and dumping of pollutants, and perform other measures aimed at improving the protection of the natural environment;

b) granting short- and long-term loans on preferential terms for the realization of measures for ensuring an efficient utilization of natural resources and protection of the natural environment;

c) establishment of higher norms of depreciation of fixed productive nature protection capital;

d) exempting funds for the protection of the natural environment from taxes;

e) transferring part of the resources of extrabudgetary funds for the protection of the natural environment on contractual terms to enterprises, institutions, organizations, and citizens for measures for a guaranteed reduction in the discharge and dumping of pollutants and a decrease in harmful physical, chemical, and biological effects on the state of the natural environment and on the development of ecologically safe technologies and industries;

f) granting the opportunity to receive natural resources against a guarantee.

Article 49. Ecological Insurance

Voluntary and obligatory state and other types of insurance for citizens and their property and for the property and income of enterprises, institutions, and organizations, in case of damage done owing to the pollution of the natural environment and deterioration in the quality of natural resources, are provided in the Ukrainian SSR.

The procedure for ecological insurance is established by Ukrainian SSR legislation.

Section XI. MEASURES FOR MAINTAINING ECOLOGICAL SAFETY

Article 50. Ecological Safety

Ecological safety is a state of the natural environment, under which a warning on the deterioration in the ecological situation and on the emergence of danger for people's health is ensured.

Ecological safety is guaranteed to Ukrainian SSR citizens through the implementation of a wide set of interconnected political, economic, technical, organizational, state-legal, and other measures.

Article 51. Ecological Requirements for the Siting, Planning, Construction, Reconstruction, Commissioning, and Operation of Enterprises, Installations, and Other Facilities

During the planning, siting, construction, and commissioning of new and reconstruction of existing enterprises, installations, and other facilities and improvement in

existing and introduction of new technological processes and equipment, as well as in the process of operation of these facilities, people's ecological safety, efficient utilization of natural resources, and observance of norms of harmful effects on the natural environment are ensured. At the same time, provision should be made for the reclamation, recovery, and decontamination of harmful substances and waste, or their complete elimination, and for the fulfillment of other requirements for the protection of the natural environment and people's health.

Enterprises, institutions, and organizations, the activity of which is connected with a harmful effect on the natural environment, irrespective of the time of their commissioning, should be fitted with installations, equipment, and devices for cleaning discharges and dumps, or decontaminating them, and for reducing the effect of harmful factors, as well as with instruments for controlling the quantity and composition of pollutants and the characteristics of harmful factors.

Plans for economic and other activities should contain materials for evaluating their effect on the natural environment and people's health.

An evaluation is made with due regard for the requirements of legislation for the protection of the natural environment, ecological capacity of a given territory, state of the natural environment in the place where the siting of facilities is planned, ecological forecasts, prospects for the social and economic development of a region, and force and types of the combined effect of harmful factors and facilities on the natural environment.

Enterprises, institutions, and organizations, which site, plan, build, reconstruct, retool, and commission enterprises, installations, and other facilities, as well as conduct research activity, which, according to their evaluation, can have a negative effect on the state of the natural environment, submit a special statement on this to the Ukrainian SSR Ministry of Protection of the Natural Environment and its local bodies.

The commissioning of enterprises, installations, and other facilities, at which the observance of all ecological requirements and the fulfillment of measures envisaged in plans for construction and reconstruction (expansion and retooling) are not ensured in a full volume, is prohibited.

Article 52. Protection of the Natural Environment During Application of Plant Protection Agents, Mineral Fertilizers, Toxic Chemical Substances, and Other Preparations

Enterprises, institutions, organizations, and citizens must follow the rules of transportation, storage, and application of plant protection agents, stimulators of plant growth, mineral fertilizers, toxic chemical substances, and other preparations in order to prevent the

pollution of the natural environment and food products with them or their components.

During the development of new chemical preparations and substances and other substances potentially dangerous for the environment permissible levels of the content of these substances in facilities of the natural environment and food products and methods of determining their residual quantity and recovery after use should be developed and approved in accordance with the procedure established by legislation.

The content of natural and artificial admixtures, which can negatively affect the state of the natural environment or people's health, in such preparations, as well as raw materials utilized for their production, should not exceed the permissible levels established in accordance with legislation.

Ecological requirements during the production, storage, transportation, utilization, decontamination, and burial of toxic and other substances dangerous for the natural environment and people's health, inclusion of chemical substances in the category of toxic ones, and their classification according to degrees of danger are determined by normative documents on the basis of the conclusion of a state ecological assessment and are coordinated by the Ukrainian SSR Ministry of Health and the Ukrainian SSR Ministry of Protection of the Natural Environment.

The list of plant protection agents, stimulators of plant growth, mineral fertilizers, and other substances and preparations, the application of which is permitted in the national economy, as well as methods and conditions of their application, are approved by the Ukrainian SSR Ministry of Health and the Ukrainian SSR Ministry of Protection of the Natural Environment.

Article 53. Protection of the Natural Environment Against Uncontrolled and Harmful Biological Effect

Enterprises, institutions, and organizations must ensure an ecologically safe production, storage, transportation, utilization, destruction, decontamination, and burial of microorganisms, other biologically active substances, and objects of biotechnology, as well as the introduction, acclimatization, and reacclimatization of plants and animals, and work out and implement measures for the prevention and elimination of the consequences of a harmful effect of biological factors on the natural environment and people's health.

The development of new strains of microorganisms and biologically active substances is carried out only on the basis of permits of the Ukrainian SSR Ministry of Health and the Ukrainian SSR Ministry of Protection of the Natural Environment with an evaluation of their effect on the natural environment and people's health.

During the development of the indicated organisms and substances norms of maximum permissible concentrations and methods of determining these organisms

and substances in the natural environment and food products should be worked out.

The production and utilization of new strains of microorganisms and other biologically active substances are carried out only after the performance of overall research on their effect on people's health and the natural environment according to a permit of the Ukrainian SSR Ministry of Health and the Ukrainian SSR Ministry of Protection of the Natural Environment.

Article 54. Protection of the Natural Environment Against Acoustic, Electromagnetic, Ionizing, and Other Harmful Effects of Physical Factors and Radioactive Contamination

Local soviets of people's deputies, enterprises, institutions, organizations, and citizens, when carrying out their activity, must take the necessary steps to prevent and avoid an excess of the established levels of acoustic, electromagnetic, ionizing, and other harmful physical effects on the natural environment and people's health in settlements, recreational and protected zones, and places of a mass accumulation and breeding of wild animals.

Enterprises, institutions, and organizations carrying out economic or other activities connected with the utilization of radioactive substances in various forms and for any purposes must ensure the ecological safety of this activity, which rules out the possibility of a radioactive contamination of the natural environment and a negative effect on people's health in the process of extraction, enrichment, transportation, processing, and utilization of radioactive substances.

Article 55. Protection of the Natural Environment Against Pollution With Production, Household, and Other Waste

Enterprises, institutions, organizations, and citizens should take effective steps to reduce the volumes of formation of production, household, and other waste and to decontaminate, process, and safely warehouse or bury it.

The warehousing, storage, or disposal of waste are allowed only with a special permit on territories determined by local soviets of people's deputies within the limits established by them with the observance of sanitary and ecological norms by a method ensuring the possibility of its further economic utilization and safety for the natural environment and people's health.

Article 56. Ecological Safety of Transport Facilities

Enterprises, institutions, and organizations engaged in the planning, production, operation, and servicing of motor vehicles, airplanes, ships, other transport facilities and units, and production facilities and in the supply of fuel for them must develop and implement a set of measures to lower the toxicity and decontaminate harmful substances contained in the exhausts and emissions of transport facilities, to change over to less toxic types of fuel and energy, and to observe the conditions of

operation of transport facilities and other measures aimed at preventing and reducing the discharge and dumping of pollutants into the natural environment and observing the established levels of physical effects.

The production and operation of transport and other mobile facilities and units, in the exhausts and emissions of which the content of pollutants exceeds the established normatives, are not permitted.

Managers of transport organizations and owners of transport facilities bear responsibility for the observance of normatives of the maximum permissible discharge and dumping of pollutants and the maximum permissible levels of physical effects on the natural environment established for the appropriate type of transport.

Article 57. Observance of Requirements for Ecological Safety During Performance of Scientific Research, Introduction of Discoveries and Inventions, and Application of New Machinery, Imported Equipment, Technologies, and Systems

During the performance of fundamental and applied scientific, scientific research, and experimental design work the requirements for the protection of the natural environment, efficient utilization and recreation of natural resources, and maintenance of ecological safety must be taken into consideration without fail.

The introduction of discoveries and inventions and the application of new machinery, imported equipment, technologies, and systems, if they do not meet the requirements for ecological safety, are prohibited.

In case of a violation of the established requirements such an activity is terminated by state bodies authorized for this and proceedings are instituted against guilty persons.

Article 58. Requirements for Ecological Safety With Respect to Military and Defense Facilities and Military Activity

The requirements for ecological safety established for the siting, planning, construction, reconstruction, commissioning, and operation of facilities for limiting the negative effect of chemical, physical, and biological factors on the natural environment, as well as other requirements provided for by this law and other Ukrainian SSR legislation, fully apply to military and defense installations, as well as to facilities of bodies of internal affairs and state safety.

The requirements for ecological safety should also be observed during the deployment of military units, performance of military exercises and maneuvers, and movement of troops and war materiel, except for cases of special situations proclaimed in accordance with Ukrainian SSR legislation.

State control over the observance of the requirements for ecological safety with respect to military defense installations and military activity on Ukrainian SSR territory is exercised in accordance with this law and other Ukrainian SSR legislation.

Article 59. Ecological Requirements During the Placement and Development of Settlements

The planning, placement, construction, and development of settlements are carried out in accordance with the decision of local soviets of people's deputies with due regard for the ecological capacity of territories and with the observance of the requirements for the protection of the natural environment, efficient utilization of natural resources, and ecological safety.

During the drafting of long-term plans for the development and placement of settlements rural, settlement, and city soviets of people's deputies establish a regime of utilization of natural resources, protection of the natural environment, and ecological safety in suburban and green zones in agreement with soviets of people's deputies, on the territory of which they are located, in accordance with Ukrainian SSR legislation.

Section XII. NATURAL TERRITORIES AND FACILITIES SUBJECT TO SPECIAL PROTECTION

Article 60. System of Suburban Territories and Facilities Subject to Special Protection

Natural territories and facilities, which are of great ecological value as unique and typical natural complexes for the preservation of a favorable ecological situation and prevention and stabilization of negative natural processes and phenomena, are subject to special protection.

Natural territories and facilities subject to special protection form a single territorial system and include territories and nature reserve facilities, as well as health-resort, treatment and health-improvement, recreational, water protection, field-shelter, and other types of territories and facilities determined by Ukrainian SSR legislation.

Article 61. Ukrainian SSR Nature Reserve

Land and water space areas, natural complexes, and facilities of special ecological, scientific, esthetic, and national economic value, which are intended for the preservation of the natural diversity and genetic stock of plant and animal species, maintenance of the general ecological balance, and background monitoring of the natural environment, are excluded from economic utilization fully or partially and are declared the territory or facility of the Ukrainian SSR nature reserve.

The Ukrainian SSR nature reserve includes state reservations, national natural parks, reserved forests, nature

monuments, botanical gardens, dendrological and zoological parks, park monuments of horticultural park art, and protected natural boundaries.

The procedure for the organization, utilization, and protection of territories and facilities of the nature reserve and their additional categories are determined by Ukrainian SSR and Crimean ASSR legislation.

Article 62. Health-Resort and Treatment and Health-Improvement Zones

Territories with pronounced natural therapeutic factors, that is, mineral sources and climatic and other conditions favorable for people's treatment and health-improvement, are considered health-resort and treatment and health-improvement zones.

For the purpose of protecting the natural qualities and therapeutic factors of health-resort zones and preventing their spoilage, pollution, and depletion, regions of their sanitary protection are established. Within health-resort and treatment and health-improvement zones activity that contradicts their specific purpose, or can negatively affect the therapeutic qualities and sanitary state of the territory subject to special protection, is prohibited.

The declaration of natural territories as health-resort and treatment and health-improvement zones is made by the Ukrainian SSR Supreme Soviet and the Crimean ASSR Supreme Soviet and their nature protection regime is determined by the Ukrainian SSR Cabinet of Ministers and by the Crimean ASSR Government in accordance with Ukrainian SSR legislation.

Article 63. Recreational Zones

Land and water space areas intended for the population's mass organized rest and tourism are recreational zones.

The following are prohibited on the territory of recreational zones:

- a) economic and other activities, which negatively affect the natural environment or can hamper their utilization according to their specific purpose;
- b) changes in the natural landscape and performance of other actions contradicting the utilization of these zones according to their direct purpose.

The regime of utilization of these territories is determined by the Crimean ASSR Supreme Soviet and local soviets of people's deputies in accordance with Ukrainian SSR and Crimean ASSR legislation.

Article 64. Protection of Rare Plant and Animal Species and Those Threatened With Extinction

Rare plant and animal species and those (growing) threatened with extinction under natural conditions on the republic's territory are subject to special protection and are entered in the Ukrainian SSR Red Book. The

Statute on the Ukrainian SSR Red Book is approved by the Ukrainian SSR Supreme Soviet.

For the purpose of preserving rare plant and animal species entered in the Ukrainian SSR Red Book, as well as species, the recreation of which under natural conditions is impossible, the Crimean ASSR Supreme Soviet, local soviets of people's deputies, and especially authorized state bodies of management in the field of protection of the natural environment and utilization of natural resources must take the necessary steps to ensure the protection of the indicated plant and animal species, to improve their habitat (growth), and to create appropriate conditions for their reproduction or breeding and settlement.

Section XIII. EMERGENCY ECOLOGICAL SITUATIONS

Article 65. Zones of Extraordinary Ecological Situations

In accordance with the decision of the Ukrainian SSR Supreme Soviet the republic's individual territories can be declared ecological disaster zones and increased ecological danger zones, or be included in other categories of zones of emergency ecological situations.

Territories where, owing to man's activity or the destructive effect of the elemental forces of nature, stable or irreversible negative changes have occurred in the natural environment, making it impossible for the population to live and to engage in economic activity in them, are declared ecological disaster zones.

Territories where, owing to man's activity or the destructive effect of the elemental forces of nature, prolonged negative changes have occurred in the natural environment, threatening man's health and the preservation of natural facilities and restricting economic activity, are declared increased ecological danger zones.

The classification of these zones, their status, and the legal consequences resulting from the fact of inclusion of territories in the established categories, including with respect to compensations and privileges for citizens living or residing temporarily within their borders, are determined by Ukrainian SSR legislation.

Article 66. Prevention of Accidents and Elimination of Their Harmful Ecological Consequences

During the planning and operation of economic and other facilities, the activity of which can harmfully affect the natural environment, measures for the prevention of accidents, as well as elimination of their harmful ecological consequences, are developed and implemented.

State bodies for supervision of a safe performance of work in industry and in nuclear power engineering together with especially authorized state bodies of management in the field of protection of the natural environment and utilization of natural resources carry out systematic checks on the state of ecologically dangerous

facilities and on the fulfillment of appropriate measures and requirements for their safe operation.

The list of ecologically dangerous facilities is determined by the Ukrainian SSR Ministry of Protection of the Natural Environment.

In case of an accident leading to the pollution of the natural environment enterprises, institutions, and organizations must immediately begin the elimination of its consequences. At the same time, officials or owners of enterprises and managers of institutions and organizations must report on the accident and on the steps taken to eliminate its consequences to the executive committee of the local soviet of people's deputies, to public health bodies, to especially authorized state bodies of management in the field of protection of the natural environment and utilization of natural resources, and to the population.

Section XIV. SETTLEMENT OF DISPUTES IN THE FIELD OF PROTECTION OF THE NATURAL ENVIRONMENT

Article 67. Settlement of Disputes in the Field of Protection of the Natural Environment

Disputes in the field of protection of the natural environment are settled by a court, an arbitration court, soviets of people's deputies, or bodies formed by them in accordance with their competence and the procedure established by Ukrainian SSR legislation.

Disputes of Ukrainian SSR enterprises, institutions, and organizations in the field of protection of the natural environment with enterprises, institutions, and organizations of other republics are examined by commissions formed on a parity basis from representatives of the Ukrainian SSR and interested republics, or by a court of arbitration.

Section XV. RESPONSIBILITY FOR VIOLATION OF LEGISLATION ON PROTECTION OF THE NATURAL ENVIRONMENT

Article 68. Responsibility for Violation of Legislation on the Protection of the Natural Environment

A violation of Ukrainian SSR legislation on the protection of the natural environment entails disciplinary, administrative, civil, and criminal responsibility established by this law and other Ukrainian SSR legislation.

Persons guilty of the following bear responsibility for a violation of legislation on the protection of the natural environment:

- a) violating citizens' rights to an ecologically safe natural environment;
- b) violating ecological safety norms;
- c) violating the requirements of Ukrainian SSR legislation during an ecological assessment, including presentation of a knowingly false expert conclusion;

- d) not fulfilling the requirements of a state ecological assessment;
- e) financing, constructing, and introducing new technology and equipment into production without a positive conclusion of a state ecological assessment;
- f) violating ecological requirements during the planning, siting, construction, reconstruction, commissioning, operation, and liquidation of enterprises, installations, and mobile and other facilities;
- g) permitting above-normative, accidental, and unit discharge and dumping of pollutants and other harmful effects on the natural environment;
- h) exceeding limits and violating other requirements for the utilization of natural resources;
- i) arbitrary special utilization of natural resources;
- j) failing to meet the dates of payment for the utilization of natural resources and pollution of the natural environment;
- k) not taking steps to prevent and eliminate the ecological consequences of accidents and other harmful effects on the natural environment;
- l) not fulfilling regulations by bodies exercising state control in the field of protection of the natural environment and putting up resistance to their representatives;
- m) violating nature protection requirements during the storage, transportation, utilization, decontamination, and burial of chemical plant protection agents, mineral fertilizers, toxic and radioactive substances, and production, household, and other types of waste;
- n) not fulfilling the requirements for the protection of territories and facilities of the nature reserve fund, other territories subject to special protection, and plant and animal species entered in the Ukrainian SSR Red Book;
- o) refusing to present prompt, full, and reliable information on the state of the natural environment, as well as on pollution sources, and concealing or falsifying information on the state of the ecological situation or sick rate among the population;
- p) humiliating the honor and dignity of workers exercising control in the field of protection of the natural environment and encroaching on their life and health.

Ukrainian SSR legislation can also establish responsibility for other violations of legislation on the protection of the natural environment.

Enterprises, institutions, organizations, and citizens must compensate for the damage done by them as a result of a violation of legislation on the protection of the natural environment in accordance with the procedure and amounts established by Ukrainian SSR legislation.

The application of measures of disciplinary, administrative, or criminal responsibility does not relieve guilty persons of compensation for the damage done owing to the pollution of the natural environment and deterioration in the quality of natural resources.

Resources illegally acquired in nature and products produced from them are subject to withdrawal without compensation and instruments of infringements of the law, to confiscation. The income obtained from their sale is assigned to local extrabudgetary funds for the protection of the natural environment.

Officials and specialists guilty of violating the requirements for the protection of the natural environment, utilization of natural resources, and maintenance of ecological safety by representation of state bodies for the protection of the natural environment, according to the decisions of their management bodies, are fully or partially deprived of bonuses for basic results of economic activity.

The procedure for the deprivation of bonuses is determined by Ukrainian SSR legislation.

Article 69. Characteristics of Application of Civil Responsibility

The damage done as a result of a violation of legislation on the protection of the natural environment is subject to compensation, as a rule, in a full volume without the application of norms for lowering the amount of collection and irrespective of the charge for the pollution of the natural environment and deterioration in the quality of natural resources.

Persons, to whom such damage is done, have the right to compensation for the profits not obtained during the time necessary for the restoration of health and the quality of the natural environment and for the recreation of natural resources to the point of suitability for utilization according to specific purposes.

Persons owning sources of increased ecological danger must compensate for the damage done to citizens and legal entities, if they do not demonstrate that the damage has occurred owing to elemental natural phenomena or premeditated actions by the victims.

Article 70. Administrative and Criminal Responsibility for Ecological Infringements of the Law and Offenses

The determination of the element of ecological infringements of the law and offenses and the procedure for the institution of administrative and criminal proceedings against guilty persons for committing them are established by the Ukrainian SSR Code on Administrative Infringements of the Law and by the Ukrainian SSR Criminal Code.

Section XVI. INTERNATIONAL RELATIONS OF THE UKRAINIAN SSR IN THE FIELD OF PROTECTION OF THE NATURAL ENVIRONMENT

Article 71. Participation of the Ukrainian SSR in International Cooperation in the Field of Protection of the Natural Environment

The Ukrainian SSR takes part in international cooperation in the field of protection of the natural environment at state and public levels in accordance with Ukrainian SSR legislation and international law.

If the international treaty concluded by the Ukrainian SSR establishes rules other than those contained in Ukrainian SSR legislation on the protection of the natural environment, the rules of the international treaty are applied.

The Ukrainian SSR implements measures to develop and strengthen international cooperation in the field of protection of the natural environment with other states, as well as within the framework of nature protection activity of the United Nations, organizations forming part of its systems, and other governmental and nongovernmental international organizations.

Article 72. Obligation of Foreign Legal Entities and Citizens and Individuals Without Citizenship To Observe Ukrainian SSR Legislation on the Protection of the Natural Environment

Foreign legal entities and citizens and persons without citizens on Ukrainian SSR territory must observe the requirements of this law and other legislative acts in the field of protection of the natural environment and bear responsibility for their violation in accordance with Ukrainian SSR legislation.

L. Kravchuk, Chairman of the Ukrainian SSR Supreme Soviet

Kiev, 25 June 1991

State of Pollution in Ukraine Examined

91WN0688A Kiev *MOLOD UKRAYINY* in Ukrainian
2 Aug 91 p 1

[Article by Igor Zabilyk under the "Ecocatastrophe" rubric: "After Us - the Deluge"]

[Text] According to Ukrainian SSR Derzhkomstat [State Committee for Statistics], the following facilities were commissioned in the Ukraine during the 12th Five-Year Plan: sewage treatment plants with the daily capacity of 3.8 million cubic meters of water, a circulating water supply system with the daily capacity of 28.5 million cubic meters of recirculated water, and facilities for collection and neutralization of noxious substances in effluent gases with the hourly capacity of 22.4 million cubic meters...

It is nice to read the above data. The hope that in time the Ukraine will be less bothered by ecology problems starts shining. But it is too early to console oneself. Statistical indices of environmental protection construction only state the facts. But Dneprodzerzhinsk residents still have to breath ammonia vapors, as they did two years ago, and residents of Svetlovodsk (Kirovograd oblast) must hide from rain, because the Pure Metals Plant discharges into the sky elements of Mendeleyev's chemical table in an almost pure form. The ecological situation in the Kharkov, Cherkassy, Donetsk, Zaporozhye and Lugansk oblasts is not much better.

According to the Ukrainian ecological association "Zelenyy svit" [Green World], the Ukraine's is the most polluted air in the [Soviet] Union. The Donetsk-sub-Dniester industrial region has the USSR and Europe's highest share of antropogenic discharge (in t/sq. km) of sulphur dioxide and nitrogen oxides into the atmosphere. Of 64 USSR cities with the highest air pollution, 15 (Mariupol, Krivoy Rog, Dnepropetrovsk, Zaporozhye, Pavlodar, Kerch, Makeyevka, Dneprodzerzhinsk, Kiev, Donetsk and Odessa) are in the Ukraine. Results of decoding of satellite TV images indicate that large pollution spots appear on snow in winter in the Republic's territory - in the Donetsk-Krivoy Rog region (126.9 sq. km), around Kiev (6,180 sq. km), Odessa (6,000 sq. km), Kharkov (6,320 sq. km), Sumy (2,500 sq. km), Kherson (1,500 sq. km) and Pavlodar (10,840 sq. km).

In recent decades the Republic's rivers have been polluted with phenol, ammonia nitrogen and copper compounds. Large Ukrainian water arteries - water reservoirs (rotten man-made seas) - are completely befouled. Average annual contents of copper and manganese in Kremenchug and Dneprodzerzhinsk reservoirs exceeds 10 GDK [expansion not given]. In the Kiev reservoir the contents of chlorine-organic pesticides increases tens- and hundreds-fold; manganese, which was not detected there before, has been now. Bacterial and chemical pollution of the Black and Azov seas has reached extremely high levels.

Add to this the Chernobyl disaster...

The Ukrainian SSR Derzhkomstat states that during the 12th Five-Year Plan R2.3 billion was invested by the State for measures aimed at protection and efficient utilization of natural resources - R1.4 billion (62 percent of all expenditures) for protection and efficient utilization of water resources, R135 million (six percent) for protection of atmospheric air, and R387 million (17 percent) for protection and efficient utilization of land.

Compared to the 11th Five-Year Plan, expenditures for environmental protection increased by 11 percent, while commissioning of environmental protection facilities declined - for sewage treatment by 0.2 million cubic meters per day (five percent), for circulating water supply systems by 5.3 million cubic meters per day (16

percent), and for facilities for collection and neutralization of noxious substances in effluent gases by 3.2 million of cubic meters of gas per hour (13 percent).

During the 12th Five-Year Plan annual state investment allocations for environmental protection was underutilized by seven to 13 percent.

Last year R67.2 million (13 percent) were not used. Only in three oblasts (Rovno, Kherson and Lugansk) the allocations were used 100 percent, while in the Lugansk, Kharkov, Cherkassy, Zaporozhye, Kiev and Poltava oblasts environmental protection funds remained mostly unused. Apparently, this is the reason these very oblasts have the most critical ecological situation. Take sewage treatment plants. The annual plan of commissioning them was underfulfilled by 674,000 cubic meters per day (71 to 100 percent) in the Lugansk, Dnepropetrovsk, Kharkov and Donetsk oblasts. The result - the Mokra Moskovka (Zaporozhye), Bakhmut and Kalmius (Donetsk oblast) and Lopan (Kharkov) rivers are polluted with phenol (about 32 GDK), ammonia nitrogen (about 26-56 GDK) and copper compounds (65-85 GDK).

Managers of enterprises that pollute the environment blame all this on the disbalanced character of the national economy, which cannot provide construction projects with material and technical resources, equipment and construction machinery.

Apparently, it is easier to pay penalties - they are not coming out from one's pocket. It is bitter, but it appears that after us - the deluge.

Decree Details Ukraine's Chernobyl Measures

91WN0726C Kiev PRAVDA UKRAINY in Russian
7 Aug 91 p 2

[Report from the Ukrainian SSR Prime Minister's Press Service: "Making the Chernobyl Laws Work"]

[Text] The Ukrainian SSR Cabinet of Ministers has passed a decree containing organizational measures connected with implementation of the Ukrainian SSR laws: "On the Legal System of Regions Subjected to Radioactive Contamination as a Result of the Chernobyl Disaster" and "On the Status of and Social Protection for Citizens Injured by the Chernobyl Disaster."

A list of population centers located in the various radioactive contamination zones was drawn up; those zones are the exclusion zone, absolute (obligatory) resettlement zone, guaranteed voluntary resettlement zone and special radiological monitoring zone.

It was stipulated that within one month's time maps of radionuclide contamination of farmland and forests broken down by farm, forest area, forestry collective, rayon and oblast will be published in the press, and that

recommendations concerning the introduction of agricultural and forestry production in the zones of guaranteed voluntary resettlement and special radiological monitoring be approved and brought to the attention of those charged with carrying them out.

The appropriate ministries and agencies were instructed to resolve matters connected with allocation of the physical and financial resources required for implementation of both laws. It was determined that workers temporarily transferred to or assigned to jobs in the exclusion zone are to be paid R13.00 [rubles] per diem for each day spent in that zone.

Full state support funds for preschoolers who have suffered as the result of the Chernobyl disaster are to be paid for food at the rates established for preschool facilities, and for clothing and footwear at the rates established for residents of children's homes. These rates are to be brought to the attention of enterprises, organizations and agencies under the appropriate oblispolkoms.

The government has approved a list of population centers, residents of which will as of 1 April 1991 begin receiving a monthly cash subsidy in connection with restrictions on the consumption of locally-grown food products, as well as population centers in which as of the same date higher wages will be paid to workers working in radioactively contaminated areas.

Procedures were established for notifying the population of the radioactivity status of contaminated regions. Newspapers, television, radio broadcasts, bulletin boards, lectures and discussion groups, newsletters, posters, films, etc. will be widely used for this purpose.

It is envisioned that within one week a unified set of procedures for citizens injured by the Chernobyl disaster (categories I and II) to exercise their right to travel to any point in the country and back at a special rate once each year will be drawn up and brought to the attention of those responsible for their implementation.

If citizens resettled from areas of radioactive contamination have not previously received cash compensation in connection with resettlement to a different place of residence, then they have a right to receive such compensation in accordance with procedures and in amounts stipulated by the Ukrainian SSR law: "On the Status of and Social Protection for Citizens Injured by the Chernobyl Disaster." Payment of compensation is to be carried out by the ispolkoms of local soviets of people's deputies at the citizens' former places of residence.

The Ukrainian SSR Cabinet of Ministers decree also resolves certain other matters pertaining to implementation of the Chernobyl laws.

Environment Minister Shcherbak on Ukraine's Ecological Policies

91WN0727A Moscow KOMSOMOLSKOYE ZNAMYA
in Russian 21 Aug 91 p 3

[Interview with Yuriy Nikolayevich Shcherbak, environment minister of the Ukraine and leader of the Ukrainian Green Party, by KOMSOMOLSKOYE ZNAMYA special correspondents A. Kobelnyuk and P. Shevchenko, Lugansk, date not specified; first two paragraphs are source introduction]

[Text] Physician, writer, leader of the Ukrainian Green Party, people's deputy, politician, state figure. In the long list of occupational roles which Yuriy Nikolayevich Shcherbak has played, the only one missing is the one everyone is sick of—the role of "apparatchik." Even for this time of perestroika he has had a surprising career, if indeed it is appropriate to use the word "career." And it did not come to him easily. Let us recall, for example, how the deputy majority in the Ukrainian parliament received his candidacy for the position of environment minister for the republic. Nonetheless, Shcherbak, who was "alien" to many people in the session hall, became the minister. And in this new capacity he has already managed to accomplish some things, after making an energetic start.

He gave this interview to KOMSOMOLSKOYE ZNAMYA during a recent visit to Lugansk Oblast—ecologically one of the worst regions in the republic.

[KOMSOMOLSKOYE ZNAMYA] Yuriy Nikolayevich, you have come to this position only very recently, for this reason we would like to know first of all what principles you will use in your work as minister, what direction will you give to your subordinates?

[Shcherbak] These principles have been formulated in the documents most important for us: the Declaration of State Sovereignty of the Ukraine, specifically in its ecological section; the Law Concerning Economic Independence of the Ukraine; the decisions concerning the transfer of industrial facilities throughout the republic to the jurisdiction of the Ukraine and, finally, the Law Concerning the Protection of the Environment, which was just adopted. As part of the latter a whole package of legislative and normative acts is being prepared to provide the basic mechanisms for its implementation. In this regard it is important that for the first time in our history we will be able not only to monitor but also to control the use of natural resources throughout the republic. I intend to act decisively and energetically, while adhering to the laws strictly and cooperating with the environmental protection organs and authorities at the local level. Economic levers have finally been introduced: those who pollute the environment are beginning to pay. We will carry out a policy of "carrot and stick." We will actively cooperate with entrepreneurs: in this regard we intend to provide the maximum possible support for ecological enterprises, which have already put out the first shoots in the republic. A fundamental

aspect will be openness and glasnost in the work of the environmental protection organs and cooperation with the soviets and the community. I consider it unacceptable to cover up ecological disasters; the price we have to pay for this later is too high. And, finally, it is important to be systematic, comprehensive and program-oriented.

[KOMSOMOLSKOYE ZNAMYA] And can we count on a specific program for improving the ecological situation in the Ukraine and in the regions?

[Shcherbak] Yes, an all-Ukraine program of this kind is being worked out. And regional programs are also planned. In general, they will be structured in such a way that measures to actually improve the situation will be taken only after emergency measures to stabilize it have been implemented first. Many people want to achieve success immediately. But we must be realists.

[KOMSOMOLSKOYE ZNAMYA] You have become a minister. Has there been any change in the way you see things? Have you become imbued with what were previously called "state-wide interests," specifically when analyzing ecological problems which you wanted to solve before, when you were a community figure?

[Shcherbak] Of course, a change in the way I see things is occurring. It would be strange if it were otherwise. There is a theory of games and social roles. At one time I even dreamed of writing a play in which people are on a boat for about two weeks, let's say. They are bored. And they begin to play a game in which it is necessary to divide up into judges, lawyers, executioners and prisoners. They play it once and then they change roles, and yesterday's defendants become the executioners. And that is what is interesting: a person behaves according to the role which he is playing.

It is possible that this is a somewhat mechanical theory but it finds confirmation in practice. At one time I myself wrote about that. And I too am changing; I feel that I am performing on myself a unique experiment, observing myself with interest during this process, at a slight remove, as a writer would.

These changes are clearly the result of the fact that in two weeks of work in the ministry I have received significantly more information on the state of the Ukraine's natural environment than I received during five years in the "green" movement. Previously, it turns out, no one gave us complete information. Sometimes I get the impression that perhaps certain environmental protection committees themselves did not have complete information. In general, I wonder why these organizations, which have good-sized staffs, sometimes including highly-skilled specialists, and which possess sufficient powers, operated in such a way that at times almost nobody suspected their existence.

[KOMSOMOLSKOYE ZNAMYA] At present you are participating in an intensive process of accumulating and interpreting information to which you, as you say, did not previously have access. In this regard what can

you say about the ecological situation in Lugansk Oblast—the first region which you have visited as minister?

[Shcherbak] Before coming here we in the ministry did some serious work. I have in my hands an enormous document on the state of the ecological situation here which contains quite a few figures, analyses and facts. Of course, they must be interpreted, they must be formed into an integrated picture. The main problem in the oblast, and this is obvious, is drinking water. Something on the order of 800,000 people are drinking polluted water. And what will happen tomorrow? Only 22 percent of the oblast's underground waters meet the state standard for "drinking water." And another aspect that requires attention is the ecological culture of our society. In Lugansk Oblast park land occupies about 6,400 hectares: in comparison, 6,800 hectares are taken up with garbage dumps. In other words, only 0.2 percent of the oblast's territory is devoted to park land. This is one-tenth the average indicator for the Ukraine. And, incidentally, there are some very pretty places which it is simply a sin not to preserve for the people living here.

[KOMSOMOLSKOYE ZNAMYA] What do you think, are there people at the local level who are capable of carrying out the ideas which have been put forward by your ministry?

[Shcherbak] It's no secret that at present the Goskompriordy (State Committee for the Protection of the Nature) organs are not operating effectively. This is not surprising: they, like everything that concerns nature, were established on the "whatever is left over" principle, in this case in terms of personnel. There are not enough genuine ecological specialists in this area. What should be done under these circumstances? Immediately after I was confirmed as minister a GOLOS UKRAYINY correspondent asked whether I would become a "broom which sweeps in the new way?" I replied that I wanted to be a brain rather than a broom. It is necessary to teach people to think. Some workers will probably have to go. However, this will not be a mechanical process. In general, I dream of a generation of highly-skilled and relatively young people who will come to work with us in the 30-40 age range. This is an ideal age: a person is already formed but still has not lost his initiative. It is desirable to make the selection on a competitive basis. However it should be recognized straight away that this does not always guarantee the desired result. I know that in some oblasts competitions of this kind have been held, and the genuinely best specialists have not always ended up as ecological chiefs. We want to carry out work on the basis of contracts. Throughout the republic 2,500 people work within our structure, and 250 of them do not have higher education, although, given their duties, they should have it. Education, we know, is by no means the only criterion in personnel selection, especially our education. But it is a criterion.

[KOMSOMOLSKOYE ZNAMYA] The domestic economy is now going through a period in which, as it is

commonly put, market relations are being formed. Or maybe even something which precedes them. How does the so-called ecological business fit in here and what does it mean for ecology?

[Shcherbak] We are now establishing a special structural "unit" to regulate the economics of natural resource use. It will have people who are especially concerned with the problems of the ecology business and coordinating it. Almost every day I receive managers from various associations and small enterprises who come to my office with a mass of interesting proposals. We are planning to go to the government with the idea that we be granted the right to issue licenses to enterprises and organizations to carry out ecological activities. They could pay taxes which would take the form of payments to the ecological funds which are being established, and they would enjoy tax privileges.

[KOMSOMOLSKOYE ZNAMYA] If the discussion has already moved to the subject of priorities, then we would like to ask if the joint work with foreign ecological agencies is of this kind?

[Shcherbak] Yes, of course. In addition to the horizontal ties which we are actively establishing with our colleagues in the Union republics, we are simultaneously establishing contacts with the environmental protection ministries of the United States, Canada, Germany, Turkey, Poland and Hungary. We have managed to resolve the question of the Ukraine's participation in a global forum of heads of states and governments on the problems of ecology and development to be held in Brazil in 1992.

[KOMSOMOLSKOYE ZNAMYA] Yuriy Nikolayevich, you will not permit a situation in which your ministry ends up in conflict with some of the ministries to which the largest polluting enterprises are subordinate?

[Shcherbak] Of course, I have thought about this. But there are rights, there is the law, there is morality. There are our obligations before nature and before its highest manifestation—human reason. We must proceed on this basis. If a ministry intends to fulfill a plan at the expense of the health or life of children, if it so frightens our women they fear to give birth, then in that situation we shall not give way. At the same time compromises will have to be made. To close an enterprise is the simplest alternative, but we also need to think of where this will lead. With my own eyes I have seen representatives of the Kineshminskiy Protein and Vitamin Combine, a polluting enterprise, come to the Kremlin to see Ryzhkov; they raised hell there. One can understand these people; after all, for them the closing of a plant is a social catastrophe, and something should be suggested to them as an alternative. I want to emphasize that a certain circumspection is essential, maybe the same kind that is necessary in resolving nationality questions. Take, for example, a well-known (and for me unacceptable) idea of Solzhenitsyn's about dividing peoples into those who have the right to sovereignty and those who do not. I

very much respect Solzhenitsyn as a writer and at one time he was my idol, although with the years I have cooled toward him a bit.

[KOMSOMOLSKOYE ZNAMYA] We have unwittingly ended up at politics, and in this regard, what is your attitude toward the recent Ukase of President B.N. Yeltsin on the Removal of the Party from Power ("Departyization")?

[Shcherbak] Inside my ministry I do not engage in politics. Only outside it. That is the way it will be in the future.

[KOMSOMOLSKOYE ZNAMYA] Even though the environment minister of the Ukraine heads the republic's Green Party at the same time?

[Shcherbak] Yes, of course. And I have an extremely positive feeling about Yeltsin's ukase. This question, incidentally, has been discussed, and not just once, in the Supreme Soviet of the Ukraine. It's time has come, as they say. I very much hope that when we have our own president one of his first ukases will be an ukase similar to Yeltsin's.

I would note in this regard that when I meet people, particularly my subordinates, the first thing I try to determine is not their party affiliation but the level of their professional training and their moral qualities. That is more important.

Belorussia Seeking Financial Aid for Chernobyl Cleanup Effort

LD1909051291 Moscow TASS in English 1157 GMT 18 Sep 91

[By TASS correspondent Viktor Kuklov]

[Text] Minsk, September 18 (TASS)—Belorussia cannot deal with the consequences of the 1986 Chernobyl nuclear disaster on its own, according to cleanup experts.

The Republic will need some 130 billion roubles from 1986 to 2015 for the cleanup effort, experts said.

"We pin great hopes on the help of the international community, including on a conference of donor-countries for the Chernobyl fund scheduled for September 20 in the framework of the 46th session of the U.N. General Assembly," Nikolay Pakhomov, chairman of the Public Committee of Chernobyl Organisations, told TASS.

"I appeal to governments in economically developed countries to urge participants in the conference to continue the UN program to help Chernobyl victims," he said.

"We also hope for contributions by countries, state, religious and public organisations," he said.

Uzbekistan Creates Ecological Oversight Organization

91WN0726A Tashkent PRAVDA VOSTOKA in Russian 21 May 91 p 3

[Interview with Yelizaveta Vasilyevna Danilevskaya, deputy head of the Main State Ecological Assessment Organization, conducted by UzTAG correspondent N. Shulepina: "The Assessment Organization's 'Approval' and 'Veto'"]

[Text] For many years our republic has been developing its production potential without consideration for ecology. The results of that approach are clear to all. Now the Main State Ecological Assessment Organization of the Uzbek Committee for Environmental Protection has been granted the right to stop the construction of hazardous facilities. UzTAG correspondent N. Shulepina and Ye. Danilevskaya, deputy head of the Main State Ecological Assessment Organization, talked about the purposes and goals of this organization.

[Correspondent] Yelizaveta Vasilyevna, can we assume that now that your organization has been established there is no longer a possibility of mistakes with regard to the siting of plants, canals, electric power plants, farms and reservoirs?

[Danilevskaya] Here are a few examples of cases in which we have exercised our "veto." We forbade the construction of five biochemical enterprises. They were going to be producing a protein-and-vitamin concentrate, but Uzbekistan does not have the proper conditions for that kind of production. We halted construction of a foundry belonging to the Tashkent Tractor Plant Association. We will issue permission to resume construction when ways of efficiently utilizing the whole association's waste products have been found.

When we assess any project we take into consideration the region where construction is planned. We can quickly arrive at a decision on projects for Karakalpakistan, Dzhizak, Syr-Darya, Surkhan-Darya, Khorezma and Kashka-Darya. Those regions are not overburdened with industry. But there are regions where strict conditions are imposed. We warn clients and planners right from the start: facilities planned for the Tashkent, Bukhara and Fergana regions are considered only if they are vitally necessary.

We cannot go on siting enterprises the way we have in the past. But the program for siting our republic's production facilities was drafted without any consideration for ecology. A very large number of objections have been raised. Now that program has been scrapped. We also managed to "intercept" another document in time: the employment program. It also contained plans for facilities which should not be built.

We asked that a preliminary assessment of Tashkent's general plan be made, and we found that the task of

removing foundries from the city has not been completed, nor has the Salarskaya Aeration Station been taken care of. Architects have designed a new airport to be built in the vicinity of Chinaz, but no plans have been made to close the old one, which is within the city limits. That part of the project was not properly coordinated.

[Correspondent] Yet prohibitions without economic levers are not effective.

[Danilevskaya] Back in June 1989 we concluded a joint operations contract with three republic banks. Soon a statute was enacted by the USSR Supreme Soviet stating banks do not have the right to offer financing without an expert appraisal. At our request the financing of ecologically unfavorable projects already under construction has been withdrawn. We do not accept for consideration any projects which do not include an environmental impact statement.

[Correspondent] Fresh in everyone's mind is the campaign to stop construction of the monitoring and measurement equipment plant in Gazalkent. Yet the ecological assessment of it was positive...

[Danilevskaya] Noisy campaigns were also launched against two other instrument building plants which had passed our assessment. It is easy to say "we don't want it," because that carries no obligations. As a result the money and the projects went to other republics. Uzbekistan was deprived of ecologically sound enterprises, scarce products, revenue and new jobs. We are on the verge of losing another plant, one which would manufacture medicines from imported raw materials. Our organization gave permission to locate it in Tashkent, in the Sergeli district. But the rayispolkom, which is building even more housing in the industrial zone, is opposed.

[Correspondent] Incompetence harms both people and the economy. But, as I am sure you will agree, one can understand the public's alarm. For many years before the Main State Ecological Assessment Organization was established many facilities were assigned locations arbitrarily. Do all projects undergo a scientific assessment?

[Danilevskaya] In the two years since we were established we have on many occasions said a well-founded "yes" or "no" to construction. We check out the overwhelming majority of projects. But, for instance, not every apartment building needs to be checked out. That is why a general plan is essential to any city. Right now our oblast subdepartments are reviewing the general plans of cities and regional plans for central heating, water plants and sewage systems. Small facilities also undergo assessment here. Large facilities and disputes, of which there are quite a few, are analyzed both by our specialists and by independent experts. Their conclusions are considered by councils of experts under the State Committee for Environmental Protection. That was the way the Sokh Reservoir project was assessed. The comments made were very serious, and the Ministry

of Water Resources is completely unprepared to respond to them. The council of experts decided to suspend construction.

[Correspondent] But the local population hopes that this reservoir will help expand the area under irrigation and produce stable crops.

[Danilevskaya] According to experts' estimates, crop yields in the vicinity of the reservoir would decrease by several hundredweights per hectare. This projection is not only scientifically well-founded; the same thing is happening near the Andizhan Reservoir. In the region surrounding the Sokh Reservoir the situation is even more serious. If the area under irrigation is expanded the salinity of the groundwater which feeds the Sokh Reservoir will increase. In an attempt to save it the Novokokand Chemical Plant was shut down. Now it is threatened once again. Yet it is the source of fresh water for the entire Fergana Valley.

[Correspondent] Where is the guarantee that the final decision is the only right one?

[Danilevskaya] Prior to making a decision we are willing to discuss any and all arguments. If the Ministry of Water Resources finds any arguments in favor of Sokh, then we will look at them. The majority of disputed projects are connected with that one ministry. We get accused of causing delays in plan fulfillment; they call us and send us telegrams. But, for example, it is not permissible to lay a collecting main through Lake Sudochye to Karakalpakistan, nor is it permissible to use Lake Tudakul as a water source for the Amu-Bukhara Canal. There are objections to the construction of collecting mains on the left and right banks of the Amu-Darya's channel. If irrigation engineers take ecological requirements into consideration, then we will grant permission.

[Correspondent] Yelizaveta Vasilyevna, with regard to new projects termination of financing is a truly effective measure. But our republic is suffering as a result of projects that have already been built...

[Danilevskaya] Soon they, too, will have an incentive to take ecology into consideration: charges for the discharge of pollutants are going to be introduced soon.

Uzbekistan's Chernobyl Cleanup Workers Fight for State Benefits

*91WN0726B Tashkent PRAVDA VOSTOKA in Russian
21 May 91 p 3*

[Article by V. Nazarov, chairman of the Tashkent city organization of the Chernobyl Social Aid Society: "Human Rights: The Chernobyl Cleanup Workers of Uzbekistan—Do We Need Protection?"]

[Text] The Chernobyl Society had a difficult time getting the official status it received on 14 May 1990. Its goal is to unite the almost 12,000 persons living in Uzbekistan who helped with cleanup efforts after the Chernobyl

disaster and to create a card file containing information on each one of them. Most importantly, it wants to help bring about practical realization of the social benefits for which provision was made in a 31 March 1990 USSR Council of Ministers and AUCCTU [All-Union Central Council of Trade Unions] decree, No. 325, "On Measures To Improve Medical Services and Social Security for Persons Who Participated in Efforts To Eliminate the Effects of the Chernobyl Nuclear Power Plant Disaster."

Finally, the society is also developing an employment program for those who worked in the cleanup efforts.

As you can see, these goals are noble ones, and we expected to meet with understanding on the part of official organs. And at first that was what we found, on the part of the Tashkent Gorispolkom, the former Uzbek Trade Union Council and the oblast trade union council. The UzSSR Ministry of Health established a republic interdepartmental council chaired by E. A. Shakirov. It helped get a 25-bed rehabilitation center set up in a UzSSR Academy of Sciences hospital in the town of Ulugbek, as well as 100 beds in Tashkent City Hospital and a special pharmacy.

Subsequently many of our positive undertaking became nothing but bureaucratic footballs, doomed to be postponed indefinitely.

Our city society is constantly approached by cleanup workers from all parts of the republic, and they want more than just for advice or sympathy. They need documents verifying their connection with Chernobyl and confirming that they have an illness caused by the cleanup following the accident. Many documents in the appropriate Tashkent Gorispolkom and former Council of Ministers documents are buried under a "secret" classification. We have been unable to obtain a complete text of various resolutions or orders which would permit interested organizations which employ former cleanup workers to deal with the situation of persons affected by Chernobyl with full knowledge.

For example, even now there has been no specific explanation given by the USSR and UzSSR state committees for labor and social security with regard to the recalculation of medical disability payments at a majority of enterprises. For several months now many disabled persons have not been receiving their pensions because the republic Ministry of Social Security does not have any specific instructions regarding the sum of compensation to be paid.

Often people under our care hear this: "Why are you claiming benefits? You never shed blood for your homeland." They hear this in the Veteran Stores, in rayispolkom offices, at rayon social security offices and from other organizations. Here is one example. The young family of Igor Li, a disabled person who participated in the cleanup following the accident as a dosimeter operator while on compulsory military service, lives in eight square meters of space. Despite his priority right to

obtain housing he has been unable to get better housing in a year of effort. Was this not a mocking retort he got from the Akmal-Ikramovskiy Rayispolkom: "You have very elegant housing: you have an extra square meter." Incidentally, the rayon social security office in the same rayon told S. Ya. Bekker, who cannot get a pension: "We weren't the ones who sent you there..."

We have in our possession a very disheartening document dated October 1990, a copy of the minutes of one Council of Ministers session. Representatives of high-level authorities, from Gosplan to the Ministry of Trade, discussed implementation of Decree No. 325, which grants cleanup workers improved access to social security and medical care, using Syr-Darya Oblast as an example. Detailed decisions were made: "to clarify, to consider, to reinforce, to ensure..." Yet six months have passed, and beside virtually every paragraph one could note: "no," "not implemented" or "not provided."

It is clear that not much can be claimed at a time of universal shortages. However, it is time to open a special store for cleanup workers, thereby precluding misunderstandings and unhealthy talk of "excessive benefits."

Special medical care remains only a dream. When we were turned out of the UzSSR Academy of Sciences hospital in the town of Ulugbek we were assigned to Polyclinic No 3 under the former 4th Administration of the UzSSR Ministry of Health, the administration responsible for hospitalization of patients. But thus far all those who require hospitalization receive the same answer: "No space available; the ward being built for you has not yet been completed." So people are forced to make a fuss in an attempt to get admitted to the hospital in the town of Ulugbek, where there are not enough beds and the conditions leave much to be desired.

Bureaucratic indifference has also been manifested in the fact that the matter of housing and municipal service benefits for the families of deceased individuals who died as a result of service at Chernobyl has not been resolved. Our society has been refused vehicles and office space... In a word, the list is long.

But presenting that list every single time to high-level and not-so-high-level authorities would at the very least to cause confusion. I am convinced that only the passage of a republic Law on the Social Protection of Cleanup Workers (as Belorussia has already done) can protect their interests. By resolving the problem of special benefits, the law will help provide material support for many social programs. The law would create real opportunities for the creation of new jobs for the disabled and new production sectors. I think that only a Law on the Social Protection of Cleanup Workers will, by creating prospects for our financial independence, help set in motion mechanisms for self-development, self-regulation and self-support.

In closing I would like to quote something said by one of the members of the State Chernobyl Assessment Commission, words that would be seconded by all the cleanup

workers living in Uzbekistan: "We must give people back their faith that the state is conscious of its responsibility to them. It is time we realized that since 26 April 1986 we have all been living in a different era..."

Kyrgyz Republic Law on Environmental Protection
91WN0681A Bishkek SLOVO KYRGYZSTANA
in Russian 21 May 91 pp 2-3

[Law of Republic of Kyrgyzstan on Environmental Protection, signed by President A. Akayev of Republic of Kyrgyzstan in Bishkek on 17 April 1991]

[Text] The increasingly strong impact of human activity on nature and the increasing exploitation of natural resources have made it necessary for the state to take measures to secure the intelligent use of these resources with a view to the needs of present and future generations and to create a habitat meeting man's physical and spiritual requirements.

This law will set forth the necessary fundamentals of legislation to preserve natural and environmental conditions and guarantee the intelligent use of natural resources.

Subdivision I. General Provisions

Section 1. Environmental Protection Laws of Republic of Kyrgyzstan

Relations in the sphere of environmental protection and the intelligent use of natural resources will be regulated by this law and by other statutes of the Republic of Kyrgyzstan enacted in accordance with this law and will represent a constituent and prominent element of republic policy on national economic management.

Section 2. Environmental Objects of Protection

The land and its soil, underground resources, water, flora and fauna, atmosphere, other natural objects, complexes, and ecological systems, and the earth's climate and ozone layer will be protected from pollution, damage, depletion, destruction, elimination, and other negative effects.

Section 3. Basic Principles of Environmental Protection

The basic principles of environmental protection are the following:

the guarantee of citizens' actual rights to a favorable environment;

the priority of environmental protection over other types of activity;

the need to pay for the use of natural resources;

the preservation of the stability and normal functioning of the biosphere and its ecological systems;

the intelligent use of natural resources with a view to the needs of present and future generations;

the scientifically sound coordination of the ecological, economic and social interests of society;

the publication of decisions on environmental issues and close contact with public organizations and the population;

the coordination of regional, republic, interrepublic, and international interests in the sphere of environmental protection;

the observance of the requirements of environmental laws and liability for violations of these laws.

Section 4. Interrelations of Republic of Kyrgyzstan with the USSR and Other Sovereign Republics of the USSR in the Sphere of Environmental Protection

The interrelations of the Republic of Kyrgyzstan with the USSR and other sovereign republics of the USSR in the sphere of environmental protection will be regulated by the union treaty and by special agreements and treaties with the USSR and other sovereign republics of the USSR.

Section 5. Authority of the Supreme Soviet of Republic of Kyrgyzstan in Regulating Relations in the Sphere of Environmental Protection

The Supreme Soviet of the Republic of Kyrgyzstan will set environmental policy, approve the basic guidelines of environmental protection, establish the collection procedure and maximum amounts of payment for the use of natural resources, and define payment privileges.

Section 6. Authority of the President of the Republic of Kyrgyzstan in the Sphere of Environmental Protection

The authority of the president of the Republic of Kyrgyzstan in the sphere of environmental protection will extend to the following:

the establishment of special rules of natural resource use;

the announcement and establishment of the boundaries and status of ecological emergency and ecological disaster zones;

the approval of the procedure for the collection and use of environmental protection funds.

Section 7. Authority of the Cabinet of Ministers of the Republic of Kyrgyzstan in the Sphere of Environmental Protection

The Cabinet of Ministers of the Republic of Kyrgyzstan will take charge of the following areas of environmental protection:

the management, coordination, and supervision of the activities of specially authorized state environmental protection agencies and the conservation activity of

ministries, departments, associations, enterprises, establishments, and organizations, irrespective of forms of ownership and methods of economic operation (hereafter referred to as "enterprises");

the supervision of the monitoring and regulation of the use of natural resources throughout the republic;

the elaboration of the collection procedure and maximum amounts of payment for the use of natural resources and payment privileges and their submission to the Supreme Soviet of the Republic of Kyrgyzstan for its approval;

the organization of the elaboration, approval, funding, implementation, and supervision of republic and inter-regional environmental protection programs and plans;

the organization of natural resource surveys;

the approval of ecological safety standards and the limits and standards of natural resource use;

the approval of statutes on state environmental control by the Republic of Kyrgyzstan and state ecological appraisals by the Republic of Kyrgyzstan;

the approval of statutes on specially authorized state environmental protection agencies;

the making of decisions to suspend or stop work on earlier plans and programs for the development and distribution of productive forces, land reclamation, the use of chemicals in agriculture, and other decisions if this work will have an adverse effect on the environment;

the choice of locations for sites for the decontamination and burial of unutilized toxic and radioactive waste;

the settlement of disputes pertaining to environmental issues not under the jurisdiction of local soviets of people's deputies, specially authorized state environmental protection agencies, state arbitration boards, or the courts;

the organization of the ecological education and training of citizens;

the organization of international cooperation.

Section 8. Authority of Local Soviets of People's Deputies in Regulating Relations in the Sphere of Environmental Protection

Local soviets of people's deputies will be in charge of the following areas in the regulating relations in environmental protection:

the exercise of state environmental control;

the coordination of the activities of administrative bodies and enterprises in the sphere of environmental protection;

the planning and funding of environmental measures and investigative projects, project planning, scientific research, and experimental design;

the allocation of natural resources for ownership, use, and lease (the conclusion of contracts and the issuance and registration of permits) in accordance with the laws of the Republic of Kyrgyzstan and the registration of contracts for the recycling of natural resources;

the termination of the right to use natural resources or lease them;

participation in the organization and material, technical, and financial support of resource surveys and the restoration of land, water, and forest resources, as well as recreational resources, flora and fauna, and mineral resources;

the establishment of standard payments for the use of natural resources and for the dumping and emission of pollutants and the disposal of waste in the environment, and the collection and use of these payments;

the organization of the elaboration and implementation of regional programs of environmental protection and the intelligent use of natural resources;

the regulation of regional subleases;

the approval of the location of sites for the decontamination and burial of unutilized toxic and radioactive waste and the choice of locations for the disposal of other waste;

the publicizing of ecological information and of ecological education and training;

the resolution of other environmental issues within the territory under the soviet's jurisdiction.

The specific powers of local soviets of people's deputies on various levels in the sphere of environmental protection will be defined in laws of the Republic of Kyrgyzstan.

Local soviets of people's deputies will be liable for the non-observance of environmental laws.

Section 9. Authority of Specially Authorized State Environmental Protection Agencies

The authority of specially authorized state environmental protection agencies will be defined in statutes approved by the Cabinet of Ministers of the Republic of Kyrgyzstan.

Section 10. Rights and Obligations of Users of Natural Resources

The user of natural resources will have the following rights:

to use natural resources for the purposes for which they have been allotted to him;

to use natural resources according to the established procedure for other needs securing the attainment of the main goal;

to use other natural properties of resources without any detriment to the environment;

to recycle natural resources in cases stipulated by law;

to establish various restrictions for other organizations and individuals;

to demand compensation for losses incurred as a result of lawful or unlawful actions, with the exception of cases in which natural resource use rights are terminated or amended as a penalty for a legal offense;

to demand the restoration of infringed rights.

The user of natural resources will be obligated to do the following:

to use natural resources intelligently for the purposes for which they have been allotted to him;

to monitor the observance of recycling laws by users of natural resources;

to not violate the rights and legal interests of other users of natural resources;

to observe requirements and restrictions on the use, protection, preservation, and restoration of natural resources;

to maintain structures, installations, and territories, belonging to him by rights of ownership or administration and connected with the use of natural resources, in a state not jeopardizing natural surroundings.

Other rights and obligations of users of natural resources may be stipulated in laws of the Republic of Kyrgyzstan.

Subdivision II. Economic Measures To Secure Environmental Protection

Section 11. Economic Mechanism of Environmental Protection

The economic mechanism of environmental protection will envisage the following:

the economically sound division of regional and sectorial interests in the ownership, use, and disposition of natural resources;

the establishment of standard payments for the use of natural resources, the dumping and emission of pollutants, physical and other harmful influences, and the disposal of waste in the environment;

the institution of a special system of taxes for the use of ecologically harmful technology and other environmentally hazardous activity;

compensation for environmental damage and the institution of measures to restore favorable environmental conditions;

the granting of tax, credit, price, and other privileges to users of natural resources for the incorporation of waste-free, low-waste, and resource-conserving technology and for other effective conservation measures;

the offer of financial incentives to labor collectives and employees of enterprises and to citizens for positive results in environmental protection work;

antimonopoly policy in the use of natural resources;

the creation of environmental protection funds;

the economic protection of endangered territories and objects.

Other economic measures for the protection of the environment may be stipulated in laws of the Republic of Kyrgyzstan and decisions of soviets of people's deputies.

Section 12. Planning of Environmental Protection Measures

Environmental protection measures will be envisaged in interrepublic, republic, sectorial, and territorial programs and plans for the development and distribution of productive forces, regional plans, plans for the use of natural resources, short- and long-range plans for the production and financial activities of enterprises, and special ecological programs.

The planning of conservation measures will be carried out with the participation and under the supervision of local soviets of people's deputies, the State Committee of the Republic of Kyrgyzstan for Environmental Protection and its agencies, and other specially authorized state agencies.

Section 13. Financing of Environmental Protection Measures

Environmental protection measures will be financed by:

local, republic, and union budgets;

local and republic environmental protection funds;

bank credit;

enterprise funds, contributions from citizens, and other sources.

Section 14. Environmental Protection Funds

Local, republic, and public environmental protection funds and natural resource user funds will be established to finance measures for environmental protection, the reproduction of natural resources, the recovery of environmental losses, environmental cleanup operations following accidents and disasters, compensation for damages, and unforeseen expenditures.

The procedure for the formation and use of local and republic environmental protection funds will be defined by the president of the Republic of Kyrgyzstan.

Public environmental protection funds will consist of contributions from citizens, public organizations, and other sources. The procedure for the formation and use of these funds will be defined in statutes approved by public organizations.

The environmental protection funds of natural resource users will consist of contributions from users of natural resources, and the procedure for their use will be defined in contracts between them.

Subdivision III. Technical-Normative and Metrological Bases of Environmental Protection

Section 15. Technical-Normative and Metrological Bases of Natural Resource Protection and Use

A single set of technical-normative and metrological standards, serving as a basis for the ecological requirements limiting the maximum environmental impact of production and other activity, will be established for the protection and intelligent use of natural resources.

The technical-normative and metrological bases will include standards, rules, provisions, instructions, and other normative documents on the protection and use of natural resources and ecological standards.

The technical-normative and metrological requirements of environmental protection must agree with international standards, conventions, and agreements signed by the USSR and the Republic of Kyrgyzstan and the latest world scientific, technical, and technological achievements in this field.

The technical-normative and metrological requirements of environmental protection will be elaborated and approved according to the procedure defined by the Cabinet of Ministers of the Republic of Kyrgyzstan.

Section 16. Ecological Requirements Governing the Location, Design, Construction, Remodeling, Start-Up, Operation, and Liquidation of Enterprises, Installations, and Other Objects

The location, design, construction, remodeling, enlargement, and retooling of enterprises, agricultural production units, installations, and military and other objects, their start-up, operation, and liquidation must meet ecological safety requirements and envisage compensation for losses and environmental protection measures.

Plans for economic and other activity must contain information on environmental impact evaluations, which will be conducted by the client.

The start-up of facilities before all ecological requirements have been satisfied and before the environmental measures envisaged in plans for the construction,

enlargement, remodeling, or retooling of these facilities have been completed will be prohibited.

Section 17. Ecological Requirements Governing the Handling of Radioactive and Hazardous Chemical Substances

Enterprises and citizens must observe ecological requirements in the production, storage, shipment, use, decontamination, and burial of radioactive and hazardous chemical substances, observe the standards governing their use, and take measures to prevent and eliminate the harmful effects of their use on the environment.

The storage and burial of unutilized toxic and radioactive waste in the Republic of Kyrgyzstan and the transport of this waste to the Republic of Kyrgyzstan from other parts of the USSR and from abroad for the purpose of its storage or burial in the republic will be prohibited.

Section 18. Protection of Environment From Uncontrolled and Hazardous Chemical and Biological Effects

Enterprises must secure the ecologically safe production (or creation), storage (or maintenance), acclimatization and reacclimatization, shipment, use, destruction, decontamination, and burial of microorganisms, animals, plants, and substances and plan and carry out measures to prevent accidents and disasters and to avert and eliminate the effects of hazardous chemicals and biological influences on the environment.

Section 19. Protection of Environment from Influence of Technogenic Noise, Vibration, and Other Harmful Physical Effects

Local soviets of people's deputies, enterprises, and citizens must take the necessary measures to prevent and eliminate technogenic noise, vibration, electromagnetic and radioactive radiation, and other harmful physical effects on the environment in excess of standard limits.

Section 20. Protection of the Environment From Pollution by Industrial, Household, and Other Waste

Ministries, departments, enterprises, and citizens must take effective measures to reduce the formation, decontaminate, process, utilize, and dispose of industrial, household, and other waste.

The indiscriminate disposal of waste in natural surroundings will be prohibited.

The disposal of unutilized hazardous waste, including radioactive waste with a high level of radiation, within or near cities and other populated communities, in bodies of water, in health resorts, medical treatment zones, and recreational areas, and in other restricted locations will be prohibited.

Section 21. Observance of Technical-Normative and Metrological Requirements of Environmental Protection

The activities of enterprises and citizens failing to observe the technical-normative and metrological requirements stipulated in this subdivision of the law may be suspended, restricted, or prohibited by local soviets of people's deputies and environmental agencies according to the procedure specified in laws of the Republic of Kyrgyzstan until the violations have been rectified.

Subdivision IV. State Ecological Appraisals

Section 22. Purpose and Procedure of State Ecological Appraisals

State ecological appraisals will be conducted for the following purposes:

to determine the ecological hazards of projected and ongoing economic and other activity and the adequacy and validity of environmental protection measures stipulated in project plans;

to assess the correspondence of plans for economic and other activity to the requirements of environmental protection laws.

State ecological appraisals will be conducted by state environmental protection agencies on the basis of the principles of legality, scientific validity, thoroughness, independence, and openness.

Experts, including foreign experts, and representatives of the public and the scientific and technical community may be invited to participate in state ecological appraisals.

The state ecological appraisal will be conducted according to the procedure defined in the statute on state ecological appraisals approved by the Cabinet of Ministers of the Republic of Kyrgyzstan.

Section 23. Objects of State Ecological Appraisals

The following will be subject to state ecological appraisal:

draft plans, basic guidelines, and proposals on the distribution of productive forces, proposals on the use of the natural resources of the republic, oblasts, cities, rayons, and branches of the national economy in state plans and programs, other pre-planning, pre-draft, and draft documents on the development of economic and other activity (technical and economic substantiation and estimates), and plans for the construction (or remodeling, enlargement, and retooling) and liquidation of national economic enterprises, facilities, and complexes, including joint ventures with foreign firms within the territory of the Republic of Kyrgyzstan;

drafts of procedural, technical-normative, and normative-legal documents pertaining to the use of natural resources and economic activity;

documents on the development of new technical equipment, technology, materials, and substances, including those purchased abroad, and other documentation;

products produced in the republic or shipped into the republic;

the ecological status of individual regions, locations, and objects.

Section 24. Report of State Ecological Appraisal Commission

The report of the state ecological appraisal commission must be considered by the agency making the administrative decision prior to its implementation.

The financing of plans for all types of economic activity will be accessible to the client only in the presence of a positive report by a state ecological appraisal commission. The implementation of a plan subject to state ecological appraisal without a positive report by the expert commission will be prohibited.

Subdivision V. State Environmental Control

Section 25. Purpose of State Environmental Control

The purpose of state environmental control will consist of securing the observance of the requirements of environmental laws by all ministries and departments, by enterprises, and by citizens.

Section 26. Agencies Exercising State Environmental Control

State environmental control will be exercised by soviets of people's deputies and specially authorized state environmental protection agencies in accordance with the statute on state environmental control in the Republic of Kyrgyzstan, approved by the Cabinet of Ministers of the Republic of Kyrgyzstan.

The decisions of state environmental control agencies of the Republic of Kyrgyzstan will be binding.

Soviets of people's deputies and state environmental protection agencies of the Republic of Kyrgyzstan will be authorized to obtain information about environmental protection, the use of natural resources, and the state of the environment for free and without restriction from ministries, departments, enterprises, and citizens, including data on research findings.

Section 27. Environmental Monitoring

Environmental monitoring will be part of state environmental control.

The structure, content, and procedure of state monitoring will be established by the Cabinet of Ministers of the Republic of Kyrgyzstan.

Section 28. Accountability of Environmental Protection Agencies

Environmental protection agencies and their officials will be held accountable for their decisions in accordance with the laws of the Republic of Kyrgyzstan.

Subdivision VI. Ecological Emergencies

Section 29. Prevention of Accidents and Elimination of Their Harmful Ecological Effects

During the planning, operation, and liquidation of economic and other facilities, measures must be planned and taken to prevent accidents and eliminate their harmful ecological effects.

In the case of accidents and ecological emergencies, enterprises must begin cleanup operations without delay in accordance with their own plans of action in ecological emergencies and notify state agencies and the population in accordance with a duly approved program.

Section 30. Ecological Emergency and Ecological Disaster Zones

Zones of ecological emergencies or ecological disasters, their boundaries, and their status will be declared in an ukase by the president of the Republic of Kyrgyzstan, and in some cases in an ukase by the president of the USSR at the republic's request.

Cleanup operations in ecological emergency or ecological disaster zones will be financed by the funds of the enterprises responsible for the emergency and by special funds from local, republic, and union budgets, environmental protection funds, and other sources.

Subdivision VII. Natural Territories and Objects Under Special Protection, and Protection of the Atmosphere, Climate, and Ozone Layer

Section 31. Natural Territories and Objects Under Special Protection

The natural territories and objects under special protection are biospheric and other state preserves, reservations, national, natural-history, and memorial parks, game refuges, natural monuments, botanical and zoological gardens, arboretums, and animals and plants belonging to the endangered species listed in the Red Book of the International Environmental Protection Union, the Red Book of the USSR, and the Red Book of the Republic of Kyrgyzstan. Other categories of natural territories and objects under special protection may be specified in decisions of local soviets of people's deputies.

The procedure for assigning special protection to natural territories and objects will be defined in laws of the Republic of Kyrgyzstan.

The procedure for keeping the Red Book of the Republic of Kyrgyzstan will be defined by the Cabinet of Ministers of the Republic of Kyrgyzstan.

Section 32. Protection of Atmosphere, Climate, and Ozone Layer

The protection of the atmosphere, climate, and ozone layer of the earth from ecologically dangerous changes will be secured by the following:

- the organization of a network for the observation, calculation, and monitoring of changes in the chemical composition of the atmosphere, climate, and ozone layer under the influence of economic activity and other processes;

- the establishment and observance of standard limits on the dumping and emission of harmful substances and of physical and other influences affecting the chemical composition of the atmosphere, climate, and ozone layer of the earth;

- the reduction and complete cessation of the production and use, in the national economy and the home, of chemical substances harming the ozone layer of the earth;

- the reduction of emissions of gases creating the greenhouse effect;

- the assignment of responsibility for violations of requirements for the protection of the atmosphere, climate, and ozone layer of the earth.

The list of chemical substances and industrial waste with a harmful effect on the atmosphere and ozone layer will be approved by the Cabinet of Ministers of the Republic of Kyrgyzstan.

Subdivision VIII. Right of Citizens to a Favorable Environment and Their Participation in Environmental Protection

Section 33. Right of Citizens to a Favorable Environment

Each citizen will have the right to an environment beneficial to his own life and the health of future generations.

This right will be secured by the following:

- the institution of state measures to maintain, restore, and improve the state of the environment;

- the obligation of ministries, departments, enterprises, and citizens to observe environmental laws, take technical, technological, and other measures to prevent the negative effects of economic and other activity on the environment, and strictly observe environmental requirements during the planning and distribution of productive forces and the construction, operation, and liquidation of national economic and other facilities;

- the exercise of state environmental control to enforce environmental laws;

- the participation of public organizations and citizens in environmental protection activity;

the assignment of responsibility for violations of environmental laws;

the compensation of citizens in the established manner for damages to their health and property as a result of environmental pollution;

the acquisition of information about the state of the environment and scheduled projects;

the state's provision of the population with free means of individual and group protection and means of monitoring the state of the environment and the necessities of life (including food) in ecological emergencies.

Section 34. Rights and Obligations of Citizens in the Sphere of Environmental Protection

Citizens will have the following rights:

to commune with nature and make use of its gifts if this does not harm nature and the user of natural resources. In the case of natural territories and objects under special protection, this right will be governed by statutes on these territories and objects;

to participate in the discussion of draft laws and other documents pertaining to environmental protection and decisions with a potential effect on the environment and to conduct public ecological appraisals;

to participate in environmental protection measures and to contribute their own funds and labor for the preservation and augmentation of natural resources;

to unite in public organizations for the protection of the environment;

to receive ecological education and training;

to address environmental issues in letters, complaints, statements, and proposals;

to request and receive timely, complete, and accurate information about the state of the environment and protection measures;

to sue enterprises and citizens for damages to health and property as a result of adverse effects on the environment.

Citizens will be obligated to take care of nature, protect its resources, and observe environmental requirements.

The procedure for exercising the rights and obligations of citizens in the sphere of environmental protection will be established in laws of the Republic of Kyrgyzstan.

Section 35. Prerogatives of Public Organizations

Public organizations and associations will have the following rights:

to draw up conservation programs and publicize them in the news media and to encourage voluntary participation by citizens in conservation efforts;

to use their own funds and the contributions of members of public organizations to protect and reproduce natural resources, preserve and improve the environment, to take part in inspections conducted by state environmental protection agencies of the environmental plans and measures of enterprises and citizens and request authorized state agencies to conduct these inspections, and to create public funds for environmental protection and use them for conservation measures;

to request state ecological appraisals of decisions on the location, construction, and operation of facilities or on the limitation, suspension, or termination (or respecialization) of their activities and to take part in the work of the expert groups or conduct independent ecological appraisals with the aid of specialists, including foreign experts;

to obtain current, complete, and accurate information about the state of the environment, sources of pollution, and basic guidelines, programs, and measures for environmental protection;

to petition courts or arbitration boards for compensation for damages to nature and to the health and property of citizens and the property of public organizations resulting from violations of environmental laws.

Public organizations will conduct environmental protection activity in accordance with their charters and existing laws.

Section 36. Guarantees of Rights of Citizens and Public Organizations in the Sphere of Environmental Protection

The state will guarantee citizens and public organizations taking action to protect the environment the opportunity to exercise the rights granted to them by existing environmental laws.

Soviets of people's deputies, state environmental protection agencies, and other state agencies must give citizens and public organizations all-round assistance in their conservation activity, consider their proposals on the improvement of the environment and the intelligent use of natural resources, and invite citizens and public organizations to participate in the resolution of environmental issues.

Subdivision IX. Education and Training in Environmental Protection and Scientific Research

Section 37. Education and Training in Environmental Protection

To increase the ecological awareness of the public and enhance the professional training of specialists, comprehensive general education and training in environmental protection will be instituted in pre-school establishments and schools along with professional training and advanced training for specialists in secondary specialized and higher academic institutions.

The fundamentals of environmental protection will be taught as a required course in all secondary specialized and higher academic institutions, irrespective of their fields of specialization.

The heads of ministries and departments, enterprise managers, and other officials and specialists connected with the operation of facilities having an adverse effect on the environment must acquire the necessary knowledge of environmental protection.

Environmental protection agencies, public education departments, other state agencies, public organizations, and the news media will disseminate information about environmental protection and publicize conservation laws.

Section 38. Scientific Research in Environmental Protection

Basic and applied scientific research projects in fields pertaining to the scientifically sound protection of nature and use of natural resources will be assigned priority.

Research in the following fields will be conducted for the scientific support of environmental protection:

- the elaboration of the scientific basis of state environmental policy, the development of progressive low-waste and waste-free technological processes and modern equipment securing the ecologically safe operation of industrial, transport, agricultural, and other enterprises, installations, and facilities;

- the economically effective, intelligent, and resource-saving use of natural resources;

- the development of means and systems for monitoring the state of the environment, production control, and the safe and accident-free operation of equipment;

- the determination of the permissible environmental impact of human activity and the study of the processes occurring in the environment under the influence of man's economic activity;

- the elaboration of methods to prevent, reduce, or eliminate the after-effects of negative influences on the environment;

- the restoration of the necessary qualities of the environment;

- the elaboration of conservation standards and technical-normative environmental documents.

Subdivision X. Settlement of Disputes in the Sphere of Environmental Protection. Liability for Violations of Environmental Laws

Section 39. Procedure for Settling Disputes in the Sphere of Environmental Protection

Disputes concerning environmental issues and property disputes connected with violations of environmental

laws will be settled by local soviets of people's deputies, specially authorized state environmental protection agencies, a state arbitration board, or a court in accordance with their jurisdiction. Disputes not within their jurisdiction will be settled by the Cabinet of Ministers of the Republic of Kyrgyzstan.

The disputes of enterprises of the Republic of Kyrgyzstan with enterprises in another union republic in connection with environmental issues will be investigated by a commission made up of equal numbers of representatives from the union republics concerned. If the commission cannot agree on a ruling, the dispute will be investigated according to the procedure established in the union treaty.

Section 40. Liability for Violations of Environmental Laws

Disciplinary, civil, administrative, and criminal liability in accordance with the laws of the Republic of Kyrgyzstan will be borne by individuals guilty of the following offenses:

- the violation of the requirements of standards, provisions, rules, instructions, and other technical-normative documents on environmental protection;

- the nonfulfillment of the requirements of state ecological appraisals;

- the violation of ecological requirements during the planning, location, design, construction, remodeling, start-up, operation, and liquidation of enterprises, installations, mobile equipment, and other objects;

- the dumping of polluted sewage or emission of pollutants into the environment and the unauthorized disposal of waste with harmful physical and other effects on the environment in cases in which disposal permits are required by law;

- the use of natural resources over and above established limits, without a permit, or after the expiration of a permit;

- the failure to observe limits on pollution, the dumping or emission of pollutants in the environment, and physical and other harmful effects on the environment;

- the failure to take measures to eliminate the after-effects of harmful influences on the environment;

- the nonuse or misuse of installations, equipment, instruments, and tools for environmental protection purposes;

- delays in the construction of environmental protection facilities;

- the failure to comply with the instructions of agencies exercising state environmental control;

the liquidation of environmental installations and facilities without the permission of state environmental protection agencies;

the violation of environmental requirements during the storage, shipment, use, decontamination, and disposal of industrial, household, and other waste;

the violation of ecological requirements in the handling of radioactive and hazardous chemical substances;

the refusal to submit current, complete, and accurate information or the submission of false information about the state of the environment and the use of natural resources, as well as information about sources of pollution, the concealment of facts and data on the disposal of waste and on the excessive industrial dumping or emission of pollutants and other offenses with harmful ecological consequences.

Liability for violations of other requirements of environmental laws may also be established in laws of the Republic of Kyrgyzstan.

Liability for these offenses will not exclude liability for violations of land, water, and forestry laws, laws on

mineral resources, laws on the protection of the atmosphere and of flora and fauna, and other laws.

Enterprises and citizens must redress the damages they have caused as a result of violations of environmental laws according to the procedure and in the amounts stipulated in laws of the Republic of Kyrgyzstan.

Subdivision XI. International Relations in Environmental Protection

Section 41. Rights and Obligations of Foreign Corporate Entities and Physical Persons and Stateless Individuals

The provisions of this law and other environmental laws will extend to foreign corporate entities and physical persons and to stateless individuals unless laws of the Republic of Kyrgyzstan stipulate otherwise.

Section 42. International Agreements in the Sphere of Environmental Protection

If international agreements contain provisions contrary to those in the environmental laws of the Republic of Kyrgyzstan, the provisions of the international agreements will apply, with the exception of cases in which requirements are stricter in the Republic of Kyrgyzstan.

REGIONAL AFFAIRS

Baltic States Sign Environmental Agreements With Denmark*PM1009145891 Copenhagen BERLINGSKE TIDENDE SONDAG in Danish 8 Sep 91 p 4*

[Kirsten Sorrig report: "The Baltic States' First Agreements With a Foreign Government"]

[Text] Environment Minister Per Stig Moller (Conservative) returned yesterday from a visit to the Baltic countries after signing the world's first government agreements with the three newly independent states.

The agreements between Denmark and Estonia, Latvia, and Lithuania cover close cooperation on environmental issues. But the EC and the Nordic Council were also on Per Stig Moller's agenda.

"We agreed that we should each work separately for the creation of a 'Baltic Forum,' which will consist of the Nordic Council and a corresponding Baltic Council. I also promised Lithuanian President Vytautas Landsbergis support for their application for EC membership. There is a very deep concern in the Baltic countries about entering into close economic agreements with Russia," Environment Minister Per Stig Moller said.

The new environmental agreements open the way for close cooperation between Baltic and Danish authorities, firms, institutions, and private organizations on the transfer of know-how and technology in the environmental field. The program will build on bilateral cooperation.

"They are very interested in acquiring greater knowledge about handling chemical waste and reducing air pollution. And in this field there is more than enough to tackle. There is serious air pollution in Lithuania, and I saw some terrible dumps in Riga," the environment minister said.

The main points in the new environmental cooperation program will be training and education, industry and waste, water in the environment and groundwater protection, the protection of the countryside, and the environmental aspects of energy production.

Sharp Decline in Baltic Sea Commercial Fish Reported*91WN0694A Moscow IZVESTIYA in Russian 6 Aug 91 Union Edition p 4*

[Article by M. Zubko, staff correspondent: "Alarm Signal for the Baltic"]

[Text] Stockholm—Swedish ecologists have sounded the alarm: Stocks of cod, one of that sea's principal commercial fish, are sharply declining. This year the total cod

catch will be approximately one-fourth what it was in 1984, when the highest numbers for the entire 1980s were set.

The scientists determined that over recent years the Baltic's waters have been gradually but steadily losing their normal level of saturation with salt and oxygen, and this, together with continuing pollution, has been negatively affecting cod stocks. Research conducted in the spring of 1991 showed that populations of young cod had declined by nearly half since spring of the previous year.

And here is where the causes for the changes in the water's characteristics lie. As we know, the Baltic Sea resembles a huge natural reservoir with a very narrow "throat"—the Danish straits, which join it with the World Ocean, and through which the exchange of water takes place.

The cod and other species of fish are saved by a kind of "natural regulator," which at intervals of four to seven years causes a powerful forcing of water from neighboring seas into the Baltic. This "regulator" consists of a whole combination of natural phenomena, including wind strength and direction, pressure level, water level, and so forth. But by and large everything rests on the correlation between cyclones and anticyclones.

The last such combination occurred in 1976, when an extremely powerful cyclone, along with other phenomena, including Western winds, literally "pumped" ocean water through the Danish straits into the Baltic, reviving all the deep hollows where the cod live. But that was 15 years ago. Now the cyclical nature of that renewal has been upset, and the concentration of salt and oxygen in the water has started to decline.

Naturally the question arises of what can be done. First of all, the decline of cod populations is one more alarm "bell" for all the countries on the Baltic's shores. It is a reminder that the efforts of all these states to prevent the sea's pollution must be stepped up.

Secondly, the problem of whether to continue catching cod has become extremely urgent. "Every fall," says P. [Larsson], staff member of a research institute in the city of Lysekil, "specialists on marine fish stocks, working within the framework of the Baltic Commission, draw up recommendations pertaining to quotas for the fish catch. This year they made no such recommendations at all. The politicians must examine the situation and decide what to do about the cod: halt the catching of it and preserve part of the stocks for the future, or not."

Against the backdrop of these alarming reports, the debates, which seemingly had already started dying down, over whether bridges ought to be built across the Oresund and Great Belt straits, have started anew. No matter how small the bridge buttresses might be in relative terms (relative to the straits' width), opponents of these structures believe that they would still reduce the already-slow influx of fresh waters into the Baltic Sea.

Sweden's Minister of the Environment B. Dahl has just announced that the construction of a fixed crossing across the Oresund strait, which separates the Swedish and Danish coasts, would not worsen the situation with regard to the concentration of salt and oxygen in Baltic waters.

But that by no means rules out the possibility that debates over the bridges' construction will flare up anew here in connection with the cod problem.

FRANCE

Public Agency Formed To Manage Dordogne River Area

91WN0717B Paris LE MONDE in French 1-2 Sep 91
p 14

[Article by Dominique Richard: "Saving the Waters of the Dordogne"]

[Text] The riverine departments are pooling their energies to manage the river and its environment....

Perigueux—It's rare to see all the political factions in six departments mobilized to save a watercourse. But Puy-de-Dome, Cantal, Correze, Lot, Dordogne, and Gironde have decided to work together to create "Epidor," an unusual interdepartmental public agency. It is the first of its kind to be set up in France, and its objective is to manage the Dordogne river, its valley and its environment.

The six general council presidents unanimously decided to put Mr. Guy Pustelnik in charge of the project. Until last spring, this 38-year-old hydrobiological engineer was head of the Sarlat aquarium-museum, though he was best known for his work repopulating rivers with salmon at the behest of the Higher Fisheries Council. Within a year, Guy Pustelnik is supposed to present Epidor members a "Dordogne river charter" for their approval and implementation.

That document should define Epidor's action priorities. But first, the views of everyone from the Sancy to the Gironde estuary must be taken into account. Everyone who wants to safeguard the watercourse, maintain the water quality and protect from further damage at human hands a river that fascinated the American writer Henry Miller will have an opportunity to speak out.

18 Uses

Naturally, this will all take time, and even if the various local government entities are prepared to finance concrete action, their budgets are not unlimited. But thanks to Epidor, the options will be clearly set out. Surveys indicate the river currently supports 18 different uses, from fishing to electricity generation, gravel extraction, and canoe rentals. Not all these activities are necessarily compatible, and some should be banned—starting with gravel extraction, which alters the river bed.

Fifty-three administrative entities have some jurisdiction over the watercourse. Epidor is not trying to replace any of them; it merely wants to get them to pool their energies and encourage users and friends of the river to sit down together and talk. Moreover, some of its recommendations will not create problems.

While the Dordogne cannot really be compared to the Rhine, it does suffer greatly from the lack of a purification plant along its banks, a fact which three years ago earned it this front-page headline in the newspaper SUD-OUEST: "Dordogne is a long, peaceful trash bin." Epidor can encourage improved management of the river's utilization, so as to spread out the canoe rental companies more evenly and avoid the congestion noted at some beaches, which has inevitably affected areas adjacent to the river.

Greenpeace Issues Report on River Seine Pollution

91WN0717A Paris LE MONDE in French 3 Sep 91
p 11

[Unattributed article: "Greenpeace Demands Measures Against Pollution of the Seine"]

[Text] Rouen—On August 29 the ecology organization Greenpeace issued a report on pollution in the Seine. The river receives industrial discharges containing mercury, lead, cadmium, and copper as well as phosphates, nitrates, hydrocarbons, and detergents. The report lists the 100 enterprises responsible for the most pollution.

"It's not a question of making the polluters pay, which would amount to levying a tax on pollution," said Philippe Lequenne, program director for Greenpeace. "It is more a matter of demanding a prohibition on discharges into the Seine, giving industries an incentive to clean up their manufacturing processes." The report notes that no citations were issued anywhere in the basin in 1990, despite the numerous infractions. Some sections of the river have not been monitored in 10 years. Restrictions on quantities of pollutants discharged and prohibition of the most toxic substances are the measures most urgently needed, according to the Greenpeace militants.

Farmers in the basin discharge both DDT and fertilizers into the river. Out of the 17 million inhabitants of the Seine-Normandie basin (30 percent of the French population), 8 million still dump untreated waste water directly into the river, due to lack of purification plants. To bring water quality up to European standards, the number of such plants along the Seine would have to be doubled.

In Paris, bacterial pollution is 100 times the level certified safe for swimming. As Greenpeace sees it, Mr. Jacques Chirac will have a hard time keeping the promise he made last year: "People will be swimming in the Seine, in Paris, by 1994."

GERMANY

German Underground Radiation Laboratory Described

91MI0396A Bonn *TECHNOLOGIE-NACHRICHTEN*
MANAGEMENT-INFORMATIONEN in German
28 May 91 p 6

[Text] From time to time, unusual testing and calibration tasks call for unusual solutions. The scientists of the PTB [Federal Physical Engineering Institute] went underground in an attempt to shut out natural, but very high-energy cosmic radiation. In collaboration with the Environment and Health Research Center in Munich, they have installed an ionizing radiation laboratory unique in Europe in the former Asse salt mine at Remlingen. Embedded in pure rock salt, it lies at a depth of 925 meters. As a result of the screening effect of the mountain above, the careful selection of items of equipment, and the exceptionally low natural radioactivity of the rock salt, the PTB now has a laboratory with extremely low intrinsic radiation at its disposal.

The scientists have thus created outstanding conditions for studying and calibrating highly sensitive radiation measurement equipment, which is used to record very low levels of ionizing radiation such as that required to monitor the environment around nuclear plants. The characteristics of sensitive measuring equipment can now be studied in depth without being subject to significant natural radiation, and calibrations can be performed in defined radiation fields, the level of which is in the ambient radiation range. A measurement room above ground does not provide these opportunities.

This makes the PTB the sole state metrology institute in the world to have such an underground laboratory at its disposal for the future. This significantly enhances its leading role in very low radiation level dosimetry.

IRELAND

'Green 2000' Environment Advisory Group Set Up

91WN0702A Dublin *IRISH INDEPENDENT*
in English 26 Jul 91 p 2

[Article by Tony O'Brien, Environment Correspondent:
"Green' Group Appointed"]

[Text] A special group to determine which problems will face our natural environment in the next century has been set up by the Taoiseach Mr. Haughey.

Called the Green 200 Advisory Group, it follows on a pledge given by the Taoiseach in his speech to the Fianna Fail Ard-Fheis last March.

Details of the Green 2000 idea were revealed in the *IRISH INDEPENDENT* last month when Mr. Haughey said: "The objective is to look ahead to the end of this

century and see what sort of environment we can expect to have and what environmental problems are likely to arise."

Now he has formally established the group of experts who will carry out the review. It will be headed by his special advisor on environmental affairs, David Cabot.

The 15-person advisory group will undertake its work over an 11-month period and will present its Green 2000 report to the Taoiseach. The group will seek submissions from interested organisations and individuals.

As well as Dr. Cabot, the advisory group includes Professor Emer Collieran of University College Galway and An Taisce, Dr. Tim Collins, special advisor to the Minister for Environmental Protection, Mary Harney and Prof. Frank Convery of the Environmental Institute at University College, Dublin.

Other members are: Dr. Paddy Fitzmaurice, Eddie Mac Suibhne, Anna Marie McHugh, Patricia McLister, John McLoughlin, Mary Moylan, Prof. Marie Mulcahy, Prof. Palmer Newbould, Richard Nairn, Sandy Percival and June Thompson.

Energy Minister Opposes Further Development of Sellafield Nuclear Dump

91WN0703A Dublin *IRISH INDEPENDENT*
in English 25 Jul 91 p 3

[Article by Gene McKenna, Political Staff: "Cabinet Against Nuclear Burial Plans"]

[Text] The government misgivings with regard to the siting of a new nuclear underground dump at Sellafield were underlined yesterday when the Cabinet backed Energy Minister Bobby Molloy's efforts to stop it going ahead.

As a three-man delegation acting for Mr. Molloy met British Department of Environment officials in London, Mr. Molloy briefed his Ministerial colleagues on his moves to oppose the plant.

Mr. Molloy had instructed the officials to convey to their British counterparts his "deep concern" at the proposed further development of Sellafield.

It is believed Mr. Molloy may seek an early meeting with British Energy Secretary John Wakeham to impress on him at first hand how seriously the Government views the proposed development.

Mr. Molloy said yesterday that the continued operation of Sellafield has been a cause of major concern to the Irish people and the latest proposal by Nirex, the British waste management agency, would undoubtedly increase traffic of nuclear cargo in the Irish Sea. This will be "a further and justifiable cause of concern."

As well as Mr. Molloy's own concern, a number of other Ministers—particularly those representing east coast constituencies—have expressed worries at the health hazards of Sellafield.

The three-man party of officials from the Department of Energy has reported back to Mr. Molloy.

They had preliminary discussions with their British counterparts on their arrival in London on Tuesday evening.

Further talks took place yesterday and last night the officials were back in Dublin to reveal the results of their talks to Mr. Molloy, who is not expected to make further public comment until he has evaluated the official's findings.

Nuclear Energy Board Urges Further Reduction of Sellafield Radioactive Discharges

91WN0739A Duboin IRISH INDEPENDENT
in English 15 Aug 91 p 9

[Article by Eilish O'Regan: "Sellafield Risk 'Still to High' Despite Fall in Radioactivity"]

[Text] Radioactive discharges from Sellafield are continuing to decrease, but while the doses pose a negligible safety risk, they are still at an undesirable level and must be further reduced, the Nuclear Energy Board warned yesterday.

The risk of fatal cancer arising from even the highest levels of radioactivity in fish is reckoned to be 400 times less than that of dying in a road accident.

A Board report on radioactivity monitoring of the Irish marine environment concludes that the continuing discharge of radioactive effluents from the Sellafield nuclear fuel processing plant in Cumbria represents no hazard to consumers of fish from the Irish Sea.

It points out that radioactivity dose levels represent less than one percent of the Commission on Radiological Protection's recommended annual dose limit for members of the public.

However, the Board's assistant chief executive John Cunningham pointed out yesterday that every bit of radiation carries with it a risk but in this case it is "negligible."

He explained that analysis of radioactivity in sea water, sediments, seaweed, fish and shellfish shows that contamination levels in the Irish Sea continued to fall between 1988 and 1990 although the rate of decrease was less than in previous years.

The radiation-induced risk in 1988 to a typical Irish consumer of seafood is about one-in-fifteen million and to a heavy consumer one-in-three million.

This compares with a risk in any year of death from cancer of 1-in-530; from road accidents of 1-in-7,300 and accidents in the home 1-in-10,700.

Discharges

However, Mr. Cunningham said he expected an increase in discharges from the proposed new reprocessing plant in Sellafield.

But he claimed the doses would continue to be very small.

The report shows the discharges were higher in 1989 compared to the previous year. The continuous operation of the reprocessing plant in 1989 followed nine months operation in 1988. The discharges in 1990 were the lowest to date.

Concentrations were highest in Carlingford Lough and decreased southwards along the coastline. The greater the distance from Sellafield the bigger the decrease in sediment.

A peak in radioactive discharges was recorded in the mid-seventies. They were reduced slightly during the following years until significant reductions were achieved from the early 1980s onwards.

UNITED KINGDOM

Report Predicts Increased Cancer Deaths From Nuclear Weapons Tests

91WN0701A London THE DAILY TELEGRAPH
in English 6 Aug 91 p 4

[Article: "N-Tests Will Kill 430,000 Say Doctors"]

[Text] Nuclear weapons tests will cause 430,000 extra cancer deaths by the end of the century, a report says today.

Released to coincide with Hiroshima Day, the report by the International Commission to Investigate the Health and Environmental Consequences of Nuclear Weapons Production calls for an end to the tests.

It says that in 1,900 tests by Britain, China, France, the Soviet Union and the United States since 1945, the bomb yield has been 40,000 times that of the Hiroshima bomb.

As a result, the dose by the year 2000 will result in 430,000 extra cancer deaths. Some have already occurred.

The study was introduced by Sir Raymond Hoffenberg, president of the Medical Campaign Against Nuclear Weapons, a UK affiliate of the 200,000-member International Physicians for the Prevention of Nuclear War.

It says nuclear powers are complacent about the dangers and calls for epidemiological studies to identify and monitor high-risk groups.

Exposure to extremely low-frequency radiation from electronic appliances and power lines could be linked to cancer, according to a National Radiological Protection Board said yesterday.

The report follows a U.S. Environmental Protection Agency study indicating that electromagnetic radiation may promote cancer.

Debate on Nuclear Fuel Storage Reopened

91WN0736A London *THE DAILY TELEGRAPH*
in English 4 Sep 91 p 16

[Article by Christine McGourty: "Nuclear Storage Debate Reopened"]

[Text] The direct storage of spent nuclear fuel would expose people near the storage facility to doses of radioactivity as much as 30 times higher than if the fuel was reprocessed, according to a study.

The results will add to the controversy over the relative merits of storage and reprocessing. In Europe the trend is towards storage, which many now argue is cheaper.

Scottish Nuclear recently submitted a feasibility study on dry storage for spent fuel at two of its reactors. The

European Commission is now investigating the relative cost and safety of different storage options to resolve the debate.

The study, by the National Radiological Protection Board [NRPB], showed that people living within a few miles of a storage facility would receive an annual dose of 2.8 milliSieverts of radiation—almost 30 times the current recommended annual dose. The dose is also 30 times higher than that from fuel stored after reprocessing.

The main source is radiation from an element called technetium-99, one of the fission products from uranium. The radionuclide is highly mobile in ground water and its movement is not slowed down by absorption. But those living near storage facilities or proposed sites have little to fear. "There won't be anything for at least 10,000 years," said Ms Mobbs, one of the NRPB researchers. "The maximum dose will be to those living 400,000 years after disposal."

The predicted doses came as a surprise even to the researchers. "I was expecting to get much smaller answers," said Ms Mobbs. She said the researchers may have been "over-pessimistic" about the behaviour of technetium. The doses were calculated using mathematical models based on data from European facilities.

They represent the waste from a 20 Gigawatt reactor, assuming it would produce 600 tons of waste annually. The European Commission faced a "difficult" question in weighing savings on the electricity bills of people living now and the health of future populations, said Ms Mobbs.